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ABSTRACT

The result of a year of research and development in the classroom, the language arts activities presented in this handbook are designed for use with microcomputers in elementary and junior high classrooms. The first chapter reviews the current uses of microcomputers in the classroom and identifies the problems associated with the prevailing "drill and practice" approach. The second chapter presents a framework that treats the microcomputer as a tool to assist teachers while emphasizing a holistic approach to instruction and the interactive capabilities of microcomputers. Chapter 3 discusses the role of the teacher in computer software development and the use of computers in the writing process. Chapters 4 through 8 present five sets of computer activities using examples of actual software available for the Apple II. Alternate software and most popular computers can be employed in the activities and are suggested throughout the text. (A list of software and source books for teachers, a glossary, and blackline masters of task cards, posters and overhead projector slides are included.) (RS)

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Interactive Technology Laboratory

Report # 6

The Write Help

A Handbook for Computers in Classrooms

Hugh Mehan and Randall Souviney

Editors

July 1984

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The Write Help

A Handbook for Computers in Classrooms

Hugh Mehan and Randall Souviney

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July 1984

The research and development for this handbook was supported by funds from the State of California Department of Education (Grant No. 1071). The conclusions do not necessarily reflect the views or policies of the State Department of Education.

PREFACE

The language arts activities presented here are designed for use with microcomputers in elementary and junior high school classrooms. These activities are the result of a year of research and development in three classrooms. Teachers from the Oceanside Unified School District and the Vista Unified School District collaborated with researchers from the University of California, San Diego to select and test a variety of software for reading and writing. This "field testing" took place in classrooms with diverse student populations. Students came from different socioeconomic and ethnic backgrounds. The students' abilities were measured from the lowest CTBS quartile to those with Gifted and Talented Education (GATE) qualifications. Observation of and participation in the implementation of these programs in different classrooms has provided us with valuable knowledge about ways to organize classrooms for instruction with computers, patterns of teacher-student interaction and students' learning.

The Handbook is organized into eight chapters. In the first chapter, we review the current uses of microcomputers in schools and identify the problems we see with the prevailing emphasis on drill and practice and programming. In Chapter 2, we present the framework for an alternative approach, one that treats the microcomputer as a tool to assist teachers meet educational goals in the language arts area. In order to integrate microcomputers with language arts instruction, we emphasize a holistic approach to instruction and procedures which exploit the interactive capabilities of microcomputers. The third chapter serves as a transition between the general theoretical framework to computer use in schools presented in Chapters 1 and 2, and the specific language arts activities in the final five chapters. In Chapter 3, we discuss the role of the teacher in computer software development and relate the use of computers to the writing process. There is also a short section for novice teachers describing the parts of a microcomputer and how they work.

In Chapters 4-8, we present five sets of computer activities ready for classroom use. Chapter 4 begins with a brief overview of classroom management issues and includes a set of activities, "Introducing the Classroom Computer," designed to introduce the basic computer operations and keyboarding skills to students. The "Writing Letters: Learning The Editor Commands" chapter introduces the use of the word processor for writing. Chapters 6, 7, and 8 offer structured writing experiences for poetry, expository writing and developing a class or school newspaper. Appendices include a list of software and source books for teachers, a glossary and blackline masters of task cards, posters and overhead projector slides.

Throughout the book, examples of actual software available for the Apple II computer are presented. Alternate software and most popular computers can be employed in the activities and are suggested throughout the text. We hope the ideas presented in this book will help teachers better integrate both writing and computers into their daily instruction.

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We also acknowledge the support of Dr. Gary Olson, Superintendent of the Vista Unified School District and Dr. Steven Speach, Superintendent of the Oceanside Unified School District. We thank the principals Raub Mathias, Olive School; Eloise Wise, Palmquist School; Timothy Keane, Garrison School; and the staff at each school for their patience and understanding.

The authors owe a debt of gratitude to James Levin and Robert Rowe: Levin, for his efforts in designing much of the the software discussed here, and Rowe, for his pioneering utilization of word processing in his classroom over the past several years. Their work has significantly influenced the development of the ideas presented this book. Finally, we thank Marcia Boruta, Christy Drale, Moshe Cohen, Luis Moll and Marti Tum Suden who made many valuable suggestions on earlier drafts of this manuscript, and Norma Allison for her patient efforts on the word processor making these pages presentable.

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8

The materials in this book have been field tested in grade 4-8 classrooms. The scheduled time listed for each activity assumes the classroom has full time access to one computer with a disk drive and a printer. Teachers have successfully used the suggested activities in a computer laboratory with 12-15 computers available and in situations where a computer is available for only part of the school year. The amount of instruction time required for each series of activities will depend on the frequency of computer use by each student, the grade level and amount of prior experience.

In Chapters 4-8, each activity begins with an instructional objective. The objectives are written as a guide to the teacher and are not intended to specify performance criteria. Each objective can therefore be adapted to meet a range of student needs by selecting appropriate content and adjusting the complexity of the writing tasks involved.

To aid the novice computer-using teacher, the authors chose to employ descriptions of actual software and the Apple computer rather than attempt to write generic descriptions of software applications. The examples and activities throughout the book utilize The Writer's Assistant word processor (requires one disk drive) and a series of Interactive Writing Tools (InterLearn Inc). These software products exemplify the approach to teaching writing advocated in Chapters 1-3. The Writer's Assistant is also the editor in the QUILL program (requires two disk drives). QUILL (D.C. Heath) also offers several unique features which can facilitate childrens writing. Several of the popular microcomputers and word processing systems designed for the novice writer (eg., The Bank Street Writer) can be substituted in activities requiring text editing. Alternatives to the Interactive Writing Tool software are suggested where appropriate. For more information, see the annotated list of writing software products.

CHAPTER ONE

THE CURRENT STATE OF MICROCOMPUTER USE IN SCHOOLS

by

Hugh Mehan

We frequently hear that we are in the midst of a "computer revolution." Virtually every scholarly report that discusses computers invokes the "revolution" metaphor. This revolutionary view of computers in education, business, home life, is reinforced by the popular press; the microcomputer was Time Magazine's *Man of the Year*, 1984.

Although this book is concerned with the introduction of computers into classrooms, and hence can be seen as participating in the very revolution we are discussing, we want to take a critical look at the idea that computers contribute to a revolution in education. In order to justify the claim of revolution, there would have to be significant changes in the social organization of schools, the way in which instruction is conducted in classrooms, and differences in the very knowledge that students are acquiring.

A Computer Revolution in Education?

When discussing a computer revolution in education, the issue is not simply whether computers are present in schools, or are being used in classrooms. Computers *are* present in schools, and their numbers are increasing. Computers *are being used* in classrooms, but primarily for drill and practice. The use of microcomputers for drill and practice is a classic example of "old wine in new bottles." It makes them into high-tech teaching machines, merely a new package to meet traditional educational goals. From our point of view, we will not have a computer revolution in education unless computers are used in new ways to achieve important educational goals — goals that could not be achieved readily without them -- or entirely new educational objectives.

Previous Attempts at Innovation in Education

This is not the first time that a significant innovation has been introduced into schools. In trying to understand the "revolution" in education surrounding microcomputers, it is instructive to examine the past history of attempts to introduce change in schools.

Previous efforts to create change in schools by introducing new technology or curriculum include inquiry learning in science, the "new math," local governance of school districts, the Experimental Schools Program, and "open classrooms." Most of these have met with limited success. Saranson (1982) described limited success as:

1) The program of change did not last longer than outside funding or support;
(2) There was no discernible impact on the organization of education within the school.

Why were these proposals for significant changes in educational governance and curriculum transient? One reason concerns the origins of the recommendations. These proposals were largely made by people in universities, corporations and foundations. The proponents of curricula change, the removal of classroom walls, and reorganization of governance came from outside the school system. The clamor for change raised by these "external" reformers was not matched by the people who spent their working lives within the school culture. There is a recurrent theme that runs throughout the accounts of failed attempts to innovate. Attempts to introduce change that emanate from outside the school system are not highly successful. Externally imposed approaches have not been successful because they failed to take into account the effects of the recommendations on the full range of activities within the school.

There is a second reason that these innovations did not have a significant impact on the organization of instruction in schools. The proponents of innovation made the assumption that the goals of change could be achieved independently of any shift in the regular patterns of action in schools. There did not seem to be any realization on the part of the change agents that altering the techniques of teaching science or mathematics had a concurrent impact on virtually every other aspect of the school. New math and science curricula was developed, tested, and revised. Teachers manuals underwent a similar process of revision, but the relationship between math and science curricula and other the subjects taught was not considered. Likewise, the relationship among the new-math and science teachers, other faculty, and the administrative structure of the schools was not taken into account. An engineering approach to solving the perceived problem of poor math and science instruction, school governance, and the ecology of the school was adopted. This approach did not relate proposed changes to their impact on other aspects of the operation of the school system.

A third possible reason for the failure to implement these changes concerns the scope of the recommendations. Reformers such as Conant (1959), Silberman (1970), and Goodlad (1984) all focused on the organization of schools; none examined the relationship that the school has to the wider society. These reformers seldom included in their assessments the social and economic conditions of the communities and society which surround the schools. It is necessary to take into account race relations, community politics, and stratified economic opportunities when considering changes in the organization of schooling. History has shown us that a failure to do so dooms the success of innovations.

The Introduction of Computers into Schools

In general, these unsuccessful attempts to introduce change were not designed by people who are indigenous to the culture of the school. Instead, they were introduced by people at the top of the educational system. The process by which computers are being introduced is different in many respects from previous attempts at innovation.

Sheingold et al (1983) and Allan (1984) point out that the introduction of computers into schools is primarily a grass roots phenomenon. Teachers, not high ranking administrators or outside agencies interested in change, have been bringing computers into schools. The first teachers to become involved with microcomputers learned to use them on their own time. Eventually, they began teaching students to program, solve problems and use text editors. The computer experts developed expertise on their own. Mostly self taught, they learned more and more about computers through personal interest. They acquired microcomputers at their own expense and enrolled in advanced courses of study. As knowledge of their expertise became more widely known, they started teaching colleagues, informally at first, then under institutional sponsorship--district or county sponsored inservice workshops and university extension programs.

Parents, whether motivated by the fear that their children would not develop the necessary skills to compete for jobs in a society in which information technology will predominate, or influenced by the advertising campaign that every home needs to have a computer, have applied pressure to school districts to offer courses on computing and to include computers in the school curriculum. Parental involvement has been an ingredient in the process of introducing computers that was missing from many of the previous attempts to introduce change in schools.

Business interest can not be overlooked. Computer companies are interested in selling their products. Perhaps applying the logic that students familiar with computers in school will influence their parents to purchase computers for their homes, computer companies such as Apple, Kaypro and Hewlett-Packard have donated computers to schools under the provisions of State of California legislation which provides companies tax breaks for donating hardware. Such industry give-away programs are being considered in several other states as well.

Innovative teachers, motivated parents and business interests constitute a coalition for change that is unique in educational history. It is important to note that this coalition operates more closely to the bottom of the school hierarchy than the top. Knowledgeable and innovative teachers have approached neighborhood computer stores and have been successful in receiving free or inexpensive software as well as computer hardware for use in their own classrooms. Teachers have been the driving force behind the introduction and spread of computers within schools.

Having considered some of the characteristics of previous attempts to change schools, we will now examine some ways in which microcomputers are currently being used in schools.

Prevailing Uses of the Microcomputer

Recent national surveys of computer use (CSOS, 1983; Tucker, 1983) and surveys conducted in the San Diego area (Miller, 1983, Boruta et al, 1983; Cohen, 1984) have shown that microcomputers are used primarily to teach programming and to provide drill and practice in basic skills. The current state of computer use in schools presents educators and the society at large with a number of problems. First, the use of microcomputers for drill and practice does not fully utilize the capabilities of this technology for education. Second, women, lower income and ethnic minority students do not have the same access to educational technology as do their male, middle income, and majority counterparts. Third, treating computer programming as the end point of a computer curriculum overlooks the needs of society and the work place.

Basic Skills Instruction

The most prevalent instructional application of computer use today is for basic skills instruction. Basic skills instruction usually means computer Aided Instruction" (CAI) (see Atkinson, 1972; Suppes, 1980). The extent to which CAI software is used is indicated by a recent study of 2000 computer using teachers who were asked: "What are your favorite educational software programs?" (Patterson, 1983). Of the 93 programs identified, 27 were for professional and administrative purposes, and 66 were for instructional purposes. Nearly all of the instructional programs were devoted to drill and practice or reinforcement of existing skills in math, social science and English. They were not used to generate new instructional activities.

When computers are used for basic skills instruction, students are commonly given drill and practice which reinforces instruction on material already presented in their classrooms. The material to be learned and the sequence in which it is learned is rigidly fixed by the teacher and the software. The material to be presented to students is restricted to a specific problem domain, offers a narrow range of response options and is presented to the students in very small steps (Amarel, 1983; Riel, 1983). When a correct answer is selected, the students are rewarded with a visual or musical display, often unrelated to lesson materials.

Programming

The second most common instructional application of computer use today is for "computer literacy." Computer literacy has come to mean teaching students to program computers, primarily in the BASIC language.

Computer programming is emphasized in computer literacy curricula because programming enables students to gain control of the machine (Papert, 1980). Another reason given for emphasizing programming is that it strengthens students' higher level reasoning skills. While there is no reason to argue against the first premise, there is little evidence to support the second. Even if there were considerable evidence to suggest that learning to program enhances higher order thinking, it may be short sighted to teach all students to program in BASIC.

BASIC is a general purpose programming language. While its linear structure makes it relatively easy to learn initial commands and statements, this same structure makes it difficult for beginning students to create any but the most rudimentary programs. BASIC is also limited in that it does not easily allow for hierarchically arranged programming procedures in the more modern languages, PASCAL and LOGO. Whether working in BASIC, PASCAL or LOGO, however, students receive only a limited sense of the computer's power. With special purpose languages such as Interactive Texts or spread sheets, students develop a richer sense of how to structure problems effectively and to approach problems in a disciplined way, (i.e., two of the general or "metacognitive" skills that some cognitive scientists believe can be widely applied to solving problems).

Problems With Current Uses of Microcomputers

We see a number of problems with the current uses of microcomputers in schools. The present pattern does not capitalize on the full capabilities of the technology. Furthermore, prevailing educational uses stratify access to microcomputers along social class, gender, and ethnic lines. Of equal importance, they do not match the ways in which computers are used in the work place.

Underutilization of the Computer's Capabilities

The fast pace and packaged format of CAI drill and practice software provides little opportunity to deliberate, to reconsider, or to challenge the prespecified answers. These programs assume limited knowledge on the part of the students and aim to strengthen and broaden that knowledge by repeated exposure to a similar class of exercises (Amarael, 1983). Little attempt is made to extend or apply existing knowledge.

While there is some evidence to suggest that microcomputers can deliver basic skills instruction better than conventional techniques (Kulik et al, 1983), critics of such studies (Tucker, 1983) point to the methodological problems and omissions of cost comparisons. Typically, the effectiveness studies compare the effects of recently introduced CAI programs to conventional workbook activities. These comparisons may provide a statistically significant advantage for CAI. So far, effectiveness studies have not compared CAI to methods such as cross-age tutoring, which have also been shown to improve students' learning. The utility of CAI for improving students' basic skills diminishes when the high cost of computers is taken into consideration (Tucker, 1983).

Furthermore, when the novelty of working with computers wears off, CAI workbook pages do not have the motivating effect required to sustain students' interest (Malone, 1981). In addition, the current readability and graphic quality of electronic worksheets is poorer than printed workbooks, which makes their use as an alternative medium of communication between teacher and student questionable.

Equitable Access to Educational Technology

While the most prevalent educational uses of microcomputers are basic skills instruction and computer programming, access to computers and their uses is differentially distributed. Ethnic minority and low income students receive a different kind of instruction on computers than their middle income and ethnic majority contemporaries. While middle class students, especially those who are in advanced programs (eg., Gifted and Talented Education) receive instruction which encourages learner initiative (programming and problem solving), low income and ethnic minority students receive CAI instruction which maintains the control of learning within the program (CSOS, 1983; Boruta et al, 1983).

Males and females also have differential access to computers, (CSOS, 1983; Boruta et al, 1983), especially in secondary schools (Sheingold et al, 1983). In elementary schools that have established central computer labs, boys and girls have equal access. However, this equality is not duplicated during voluntary times on computers (recess, lunch, after school clubs). More boys than girls use computers in their spare time. The equality of access reported in elementary schools disappears in secondary schools. When students are divided into curricular tracks, (college preparatory, vocational and general education), a stratification of males and females becomes apparent. Males gain greater access to computer and math labs than females.

This tracking of students by gender and socioeconomic background through different curricular tracks stratifies students' access to information technology. Differential access represents one of the ways in which the microcomputer can become a tool which contributes further to the stratification that already exists in our society. If only a few people learn to control computers, and most can only react passively to them, then we will have a system of stratification based on access to information technology (Schiller, 1981) that will make the ones based on economic capital (Marx, 1964) and cultural capital (Bourdieu and Passeron, 1977; Collins, 1980) pale by comparison.

The Needs of Society and the Work Place

The computer is a general purpose machine. It processes information that can be used for a wide variety of instructional and administrative purposes. These wide-ranging capabilities of the computer, coupled with parental pressure and pressure from business and industry, are the main reasons computers are having such a dominant impact on education. However, knowing that the computer can be used for almost any purpose does not tell schools what it should be used for. In fact, it is its flexibility that is so dazzling. Since the machine can be programmed to do many things, we must search for the constraints which tell us which computer applications make sense and which do not. We must also take into consideration the cost of applications in dollars, time and human costs.

As schools and universities organize educational curricula which involves computers, we need to insure that the instruction we provide our students will help them in the world of work. It is helpful, therefore, to examine the ways in which computers are used at work now, and try to determine how computers will be used at work in the future.

While it is not entirely clear what school children need to learn now in order to be competent and useful in the 21st century, most computer scientists believe that in a few years very few people will be actually writing computer programs with general purpose languages. Increasingly, microcomputers are being used in business and industry for word processing, spread-sheet analysis, and data systems management--applications which do not require knowledge of general purpose computer languages. These business applications are being implemented, not by highly skilled programmers but by employees learning to create electronic forms and spread sheets provided by special purpose, user-friendly programs (eg., Apple Works, Visicalc, Word Star). Eventually, computers will write programs in response to spoken or typed requests made in ordinary English (Kay, 1983), further reducing the need to produce a multitude of general language programmers.

The shift in computer uses from those dependent upon general purpose programming languages to those using special purpose programs suggests that even though our society may rely heavily on the computer, we will not need vast numbers of programmers. Even though there is a shortage of general purpose programmers now, we are likely to need far fewer in the future.

The available evidence suggests that most jobs will not be found in high technology industries, nor will high technology require a vast upgrading of the American labor force (Levin and Rumberger, 1983). On the contrary, the proliferation of high technology industries is far more likely to reduce the skill requirements in the U.S. economy than to upgrade them.

Levin and Rumberger (1983) cite Labor Department projections that say jobs for computer programmers will grow between 74% and 148% during the 1980s, while overall job growth will be only 22%. These percentages are misleading, however. The total number of new jobs for computer programmers is expected to be 150,000. Some 1.3 million new jobs are projected for janitors, nurses aides and orderlies. That is nine unskilled jobs in these categories for every computer programmer. New jobs for data processing machine mechanics will increase 148%, the fastest growing job category. But that large gain translates into an increase of fewer than 100,000 new jobs, while 800,000 new jobs are projected for fast-food workers and kitchen helpers alone.

There will neither be a proliferation of systems analyst jobs, nor will the high-tech jobs create demands for increasingly sophisticated work skills. On the contrary, the new technologies further simplify routine tasks and reduce the opportunities for worker individuality and judgment. In such diverse areas as office administration, data processing, drafting, and wholesale and retail trade, microcomputers are making it possible to employ persons with lower skills to perform what had previously been highly sophisticated jobs.

This brief examination of the use of computers in the world of work has implications for the widespread teaching of programming presently pervading our curricula. Strictly on intellectual and academic grounds, it may be important for students to gain some exposure to programming. Indeed, programming may enable students to gain a sense of how the computer operates and develop some skills in structuring problems. But, devoting years of a student's time to programming instruction can not be justified on the grounds that we are providing skills that students will require professionally (Tucker, 1983). We may need tens of thousands of general purpose programmers, but not the millions we will be producing with the current emphasis on programming in schools (Levin and Rumberger, 1983).

Instead of making programming the single entry point and the pinnacle of computer education curricula, it is important to provide students with "multiple entry points to expertise" (Levin and Souviney, 1983). Multiple entry points will enable students to use computers as powerful tools for a wide range of applications. For some students, that power will develop through the ability to program the computer. But for others, that power should come from knowing how to use the computer to write and edit text, to create music, graphics, and animation, and to organize information and communicate it to others.

Our Approach to Finding Solutions

Our overall goal as we work with computers in education is to counter the three main problems in current computer use: (1) the underutilization of the computer's capabilities, (2) stratified access, and (3) the single avenue to the world of computing through programming. In the next two chapters, we describe the approach we are taking to meet our goal. In Chapter 2, some design features of learning environments that can be assembled with computers are presented. These include (1) participation in the whole task and (2) providing dynamic support. The language arts activities for use in grades 4-8 were produced by a unique collaboration between school teachers and university researchers. A discussion of this collaborative effort along with a description of how to use computers as an aid in the writing process is the subject of Chapter 3. The language arts activities that this collaboration produced are presented in Chapters 4-8.

CHAPTER TWO

EXPLOITING THE INTERACTIVE CAPABILITIES OF MICROCOMPUTERS

by

Hugh Mehan

Margaret M. Riel

When considering the educational applications of microcomputers, the issue is not simply how they can be used in classrooms, but how they can be used to achieve important educational goals that could not be readily achieved without them. Applying this criteria, it is clear that the full range and power of microcomputers are not being exploited when their use is limited to drill-and-practice and programming. Therefore, it may be necessary to take Lesgold's (1983) recommendation, and ignore much of the first wave of educational software.

Functional Learning Environments

How can computers be used to achieve unique educational goals? As we describe in this chapter, one way is to exploit the interactive capabilities of microcomputers for language arts instruction. The availability of word processors, writing tools, computer labs and computer networks makes it possible to create learning environments which go beyond drill and practice. Rather than looking at microcomputers as dispensers of certain knowledge or rewards, we explore ways to organize functional learning environments. The functional learning environments we describe (1) adopt a holistic approach to educational practice and (2) provide dynamic support to novices learning to write.

The Whole Task

A fundamental component of our approach to computer use is the belief that children learn most effectively by participating in whole activities with others. Through this participation in the whole task, others perform some aspects of the task which are too difficult for the children to accomplish on their own; in time, the children learn how to master the entire task alone (Luria, 1976; Vygotsky, 1978; Wertsch, 1979; Flavell, 1981; Griffin and Cole, 1984; and compare Piaget, 1971).

The holistic emphasis in our work contrasts sharply with atomistic educational practice. Children most typically work alone on subparts of a task in schools. When students accomplish all the subparts, they are expected to assemble these components into a unified whole on their own. In many standard reading programs, for example, children begin work on recognizing letters, establishing sound-letter correspondence and blending letters together to "read" words and sentences. These activities often occur in isolation from reading presented as a method for learning new things from text. Or, when students are asked to write compositions, they are first asked to write sentences, then paragraphs, and finally complete essays.

A clear example of the holistic approach to educational practice, and one many of us are familiar with, is the way parents teach their young children how to read (Ninio and Bruner, 1978). From the beginning, the social setting is parent and child, and the activity is reading a book. Initially, the child knows very little about the activity of reading and the mother must carry much of the work. As the child becomes familiar with the patterns, he or she may begin to participate in simple subskills such as turning the pages, or pointing to objects. As the child gains knowledge, what is expected of him or her shifts. Now the child is asked to provide names for objects or to tell what is happening in the story. Slowly the attention is shifted from pictures to words and the child begins to recite well learned pieces of the story. This skill becomes more and more flexible as the support provided in the book and by the mother recedes, and the child becomes an independent reader.

The activity has remained constant through the whole process: parent and child sitting together reading the book. What has changed is the degree of participation in the activity on the part of the child. This changing network of support has been referred to as "The Zone of Proximal Development" (Vygotsky, 1978; Brown and French, 1979; Griffin and Cole, 1984). The activity that is accomplished by the mother and child ("the zone"), provides a good prediction of what the child will soon be able to accomplish on his or her own at some future time. Learning to do the pieces in the context of the whole guards against becoming so obsessed with accomplishing subgoals that the student never understands the relationship of the subparts of those actions to the whole task.

Computer literacy's emerging definition is the mastery of a wide range of machine operations (Bitter, 1982). Included in the repertoire of machine operations to be mastered, usually introduced through programming, are: turning the machine on and off, inserting disks, booting programs, naming machine parts and manipulating files. In many computer literacy courses, the mastery of these machine operations is taught separately from and prior to actual machine uses. That is, students are first taught how to name machine parts and operate keyboard, printer and monitor. Once they have learned the subparts of machine operations, they are introduced to computer uses such as text editing, spread sheet analysis or data-base management.

There is a parallel between the relationship that computer literacy has to computer uses and the relationship that reading readiness has to reading in instructional programs such as DISTAR (Becker, 1978). In such programs, reading readiness involves teaching the subparts of the reading process, sound-letter correspondence, word order, decoding operations--prior to and independent of the activity of reading itself. When students master all the components of reading readiness, they are expected to assemble the parts into the whole task of reading by themselves.

Let us draw an analogy between the holistic approach to reading as exemplified by Bruner's description of parents reading with their children and teaching computer operations to students. We embed the teaching and learning of machine operations within reading and writing activities. Students are not taught machine operations first, and computer uses second. Students are taught "keyboarding," disk management, file maintenance, and editing in the context of learning to write letters, generate school newspapers and compose poems. In the language arts lessons, students are presented with academic tasks to complete. The completion of tasks, such as correcting the spelling and grammatical errors in a teacher's letter, requires the students to operate the machine as well as read and write.

This holistic approach to teaching computer literacy has cognitive and social effects. Our experience shows that initially students will be slow to simultaneously learn both machine operations and writing skills. By comparison with their paper and pencil writing production, students' initial writing production using the computer will be lower. As the year progresses, students' productivity on the computer will improve. This increase will be accompanied by an overall improvement in the coherence of texts and a reduction in grammatical and format errors. Although the students in classrooms using this technique were not given explicit tuition on the mechanics of machine operations, analysis of a computer literacy test given to students at the end of the school year shows that 90% of students tested mastered basic machine operations (Mehan, et al, 1985).

Summary. We have drawn a parallel between a holistic approach to teaching reading (LCHC, 1982) and a holistic approach to learning to use a microcomputer. In doing so, we have found that microcomputers can be used to provide children support for elements of writing tasks they have not yet mastered. Furthermore, this support can gradually be removed as the children become more skillful, as we describe in the following discussion of "dynamic support."

Dynamic Support

"Dynamic support" refers to the process of systematically decreasing amounts of assistance provided to novices as they progress in expertise and gradually assume parts of the task initially accomplished by an expert. In a properly arranged teacher-student-computer environment, there is potential for creating the kind of dynamic support necessary to dramatically improve students' writing.

An example of the way in which the microcomputer can provide dynamic support can be found in Riel's research on language disabilities (Riel, 1982). She found that children with language handicaps had greater difficulty than a group of students with normal language development in making efficient problem-solving decisions when playing computer games. In a follow-up training study, Riel modified the computer software so that at first, most of the game parameters were controlled by the computer. As the players' skill increased, this support was gradually withdrawn. After several weeks, the game performance of the students with language handicaps was similar to that of normal students. In this way the computer was used to construct a "Zone of Proximal Development" which provided training in a variety of systematic, self-regulatory problem-solving skills as children learned basic materials.

Software is now available which, like the parent in the Ninio-Bruner reading example, systematically increases the degree and form of learner participation as skills develop. For example, in text editing systems such as the Interactive Writing Tools (Levin, 1982), texts are constructed which share the initiative between writers and readers along a continuum of support (Riel, Levin and Miller-Souviney, 1984). This continuum of support is shown in Figure 2.1.

Figure 2.1

A Continuum of Educational Software (from Riel et al, 1984)

Program Controlled	Mixed Control	User Control
<----------------------	----------------------	---------------------->
Static Frames with Fixed Content	Lesson Frames with Content Added	Open Frames with Variable Content

At the program-control end of the continuum, "readers" of structured interactive text can make simple choices about the direction in a story's plot. At the user-control end of the continuum, an interactive text or planner enables more skilled writers to take complete responsibility for writing. At the user-controlled end of the continuum, the computer offers high-level suggestions and provides prompts, leaving the lower-level writing activities in the hands of the student. Such writing tools make it easy for students to enter text by providing activities which range in the degree of support. Perhaps more importantly, they make it so easy to make changes in text that elementary school students can edit their writing as a functional everyday activity.

Miller-Souviney (1985) has used a set of interactive texts to teach expository writing to fourth and fifth graders. Each of the four expository writing tasks are arranged so that students are able to produce a good example of an essay *every* time they write. In the first activity, "The Sandwich Prompt," the student "makes" a unique story by choosing among options which are provided throughout the text. Below is the the first of several choices that the student makes while writing about the art of constructing sandwiches:

```
--------------------------

      SANDWICH PROMPT

Today is

1. Saturday

2. Martin Luther King Jr.'s Birthday

3. Teacher's Workshop Day

4. National Take a Computer to Lunch Day

    (Choose 1...4; 0 to exit);
    (Type a number then push return)

--------------------------
```

The following is part of a story that Michael produced using this program (Miller-Souviney, 1985). The underlined text indicates words actually entered by the student.

> The Art of Sandwich Construction
> by Michael
>
> Today is National Take a Computer to Lunch Day and I have a day off from school. My parents are playing tennis so I have to make my own lunch. My specialty is that wonder of culinary art, the sandwich! A great French chef, Francois d'Boloney, taught me to make his most secret recipe, The California Kid's Surprise! ...

This type of activity, though similar to interactive reading software such as Storytree (Scholastic) and Storymaker (Bolt, Beranek and Newman), is different in a significant way. The stories created using Interactive Tools can be saved as text files and subsequently edited using The Writer's Assistant. Stories generated using Storytree and Storymaker can not be modified by the user. This is an important distinction when teaching writing since we feel students must be able to personalize their work and easily make corrections. The "sandwich making" activity gives students a good introduction to the power of word processing.

The second activity in expository writing is an interactive tool which requires students to fill in words and phrases as well as making choices among pre-determined options:

```
                    -----------------------------

                    SCHOOL DAY SCHEDULE PROMPT

     The name of my school is

           ?

           (Type, then push CTRL-C when done)

     It is in the town of

           ?

           (Type, then push CTRL-C when done)

     I am in grade

           ?

     and my teacher's name is

           ?

     I have a very busy schedule at school. My class does

     all sorts of things to make it fun ...

                  -----------------------------
```

This "School Day Schedule" prompt provides students with the beginnings of sentences and paragraphs and invites students to complete the ideas begun for them by the expository prompter. In the following excerpt from her composition, the text that Megan entered is underlined.

> One Day at School
>
> By Megan
>
> The name of my school is Olive. It is in the town of Vista. I am in grade fourth and my teacher's name is Mrs. Souviney. I have a very busy schedule at school. My class does all sorts of things to make it fun to learn.
>
> The first thing I do is look at the blackboard and copy the daily hand tounge twister. My teacher checks my folder carefully, making sure my writing is nice and neat. ...

As students increase their writing skills, they take over more and more of the writing activity. In the third expository writing task, the students are asked to describe "how to run a computer." Topic sentences for each paragraph, as well as reminders of what should be contained in each paragraph, are provided by the program. Students enter the introduction, body, and conclusion of their essay.

HOW TO RUN AN APPLE COMPUTER PROMPT

We are lucky here at Olive School. We have Apple computers. We use them to help us practice our spelling and math, write stories and lots of other things. An Apple computer is easy to run. Just follow these simple directions.

First, it is important to know the different parts of the computer and what each does.

(Write complete sentences telling the parts of an Apple and what they do.)

?

(Type, then push CTRL-C when done.)

Next, to start the Apple, several switches need to be turned on.

(In complete sentences, describe where each switch is and what it does.)

?

(Type, then push CTRL-C when done.)

Students respond to each prompt by entering their own sentences and paragraphs. The following paragraphs are part of Michelle's version of how to run a computer (Michelle's text is underlined):

How To Run An Apple Computer

By Michelle

> We are luck here at Olive School. We have Apple computers. We use them to help us practice our spelling and math, to write stories and lots of other things. An Apple computer is easy to run. Just follow these simple directions.
>
> First, it is important to know the different parts of the computer and what each does. The moniter shows you what you write and the keyboard has letters to type with.The disk drive is where you put the disk in and the printer is for printing out stories.
>
> Next, to start the Apple, several switches ...

The final interactive tool in the expository writing series asks students to think of a topic to write about and are given a few reminders of the composition structure.

HOW TO PROMPT

> Think of something you know how to do that you could explain to a friend. For example, you may know how to wash dishes, run a computer or clean your room.

Remember:

1) The first paragraph is your introduction and will tell something about the activity.
2) The second paragraph will tell the steps it takes to do it.
3) The last paragraph is your conclusion and can tell about how you feel when you finish the activity or when you will do it again.

In this, the fourth expository writing activity, students are now responsible for producing complete texts on their own. Here is part of a story produced by Luis. Note that all the text is underlined since the entire composition was entered by the student.

How To Make Money
by
Luis

If you want to make money, you must make it right now. If you want to know why, you can say because you would want to help your family, or something else.

To make money, the easiest way could be gathering cans. Cans can be everywhere, so when you are walking and you see a can, stop and ...

Throughout these four activities, the goal is for the quality of the writing to remain constant. As the degree of the participation by the learner increases, the amount of support provided by the computer decreases.

Another method to provide dynamic support for writing is by using QUILL Planners. Planners are designed primarily as pre-writing activities. Planners can help students organize their thoughts and generate ideas for writing. The ideas generated when using a Planner are subsequently printed and can be used as a guide when composing. The Planner generated text can not be included in the final composition, however, unless it is reentered by the student.

Planners can be constructed by the teacher to provide varying amounts of support for writing. For example, a list of paragraph topic sentences could be supplied by the Planner. The student could then order the topic sentences and complete the paragraphs. Since the topic sentences supplied by the Planner can not be saved on disk, they must be reentered as the student composes the paragraphs using The Writer's Assistant.

In sum, writing tools such as the Interactive Writing Tools and the

QUILL Planner further facilitate the writing process by providing different degrees of support to the novice writer.

Word Processors and Improved Writing

The word processing systems that are available on microcomputers have been touted as one possible solution to problems in writing (Lipsom and Fisher, 1983). They facilitate the production of manuscripts by minimizing the mechanical details of writing (such as neat script, spelling) and maximizing attention on the flow of ideas. Assistance in making corrections is provided by spelling verification programs. Printers facilitate the immediate production of neat, professional looking copy.

We do not think, however, that it is the word processor *per se* that is responsible for improved writing. In and of themselves, computers can not solve the problem of teaching students to read and write. The blank screen can be just as intimidating as the blank page (Levin, Boruta and Vasconcellos, 1983). Students with the most powerful editing system still must approach the task of writing by themselves.

Reading and writing are coordinated activities. From this point of view, reading is not confined to reading circles, but rather incorporated throughout the school day, during "reading time" as well as in the content areas such as social studies and science. Writing plays a major role in the curriculum. Students have time to write in personal journals, compose essays on topics generated by the teacher and write about what they learn in science and social studies.

We have found that the microcomputer works most effectively when computer activities are coordinated with tasks in other parts of the curriculum (Mehan, Miller-Souviney and Riel, 1984). In other words, the microcomputer is most effective when it is integrated into the curriculum, not treated as an isolated activity; when it is viewed as a tool to meet educational goals, not as a teaching machine that dispenses knowledge to students.

While we have found that a microcomputer alone can not transform unskilled writers into skilled ones, it does present an environment which makes possible a new social organization for writing. It is the creation of functional learning environments, and not the computer alone, which positively effects the development of student writing.

A Functional Learning Environment: The Computer Chronicles

Functional learning environments in language arts are those in which reading and writing are organized for communicative purposes, rather than just as an exercise for a teacher to evaluate (cf. Newman, 1984). The use of "computer pen pals", and a student newswire service known as the "Computer Chronicles" (Levin, Riel, Boruta, and Rowe, 1984) are two of the ways in which we have linked reading and writing with communicative purposes. In both cases, students were connected to a normally unavailable audience, but one with which they wanted to share ideas, Writing to communicate and not just writing on a microcomputer subordinates the students' concern for the mechanics of writing to the goal of communicating clearly.

The Computer Chronicles Newswire Network is a writing network that links together students from schools in different locations as reporters in a "newswire" service. Articles can be stored on disk and sent through the mail or over telephone lines using a modem. The news network is explicitly modelled on commercial international newswire services. Whenever possible, students' attention is focused on the parallels between their work and the work of professional newspaper reporters and editors.

The Computer Chronicles Network contains a number of crucial features that make it a functional learning environment. First, the software system used is designed in ways which are similar to the "Expository Writing Prompter" described above. The "Computer Chronicles" contains a number of on-screen prompts which give the students dynamic support at all phases of the writing process. Second, students work in teams to generate new articles or to edit those received from other locations. These cooperative working sessions facilitate the division of the newspaper writing task among the students. While one student concentrates on the mechanics of writing, another student focuses on the generation of ideas. Third, cooperative working sessions create a local audience for writing. Since the students work in pairs at the computer center, the presence of another person during the writing process helps students generate ideas and provides immediate responses to the written text. Fourth, when students realize that other people will read their work for the information it contains and not just to evaluate its form, they take greater interest in the content of their writing. They engage actively in revising and editing their own writing and the texts of their peers.

Summary

Word processing systems such as Apple Writer, AppleWorks, The Bank Street Writer and The Writer's Assistant contribute to the writing process by simplifying the mechanics of entering, editing, and correcting text. The mechanical details of writing are subordinated to the flow of ideas, content, form, and style. The availability of a printer facilitates student writing since children find the immediate production of neat, professional looking copy to be highly rewarding and motivating (Malone, 1981; Miller, 1983; Levin et al, 1983; Lipsom and Fisher, 1983).

We recommend the creation of functional learning environments with microcomputers in which reading and writing are arranged for communicative purposes. The Computer Chronicles Newswire Network gives readers a goal for writing: to share their ideas and concerns with students with whom they cannot interact directly. The public nature of writing provides motivation for re-writing and editing, giving students increased knowledge of word processing and control over the composing process.

By arranging learning environments in which computer based support is gradually removed, students gain control of writing by systematically assuming the components of the task initially accomplished by the computer. Dynamic support provided by the interactive capabilities of the computer subordinates the students' concern for the mechanics of writing to the process of writing, resulting in improved quality and fluency.

CHAPTER THREE

COMPUTERS AND THE WRITING PROCESS

by

Margaret M. Riel

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This is a watershed period for American schools. The actions that educators, parents and the members of the community take now can have a considerable influence on the future course of education. Computers can become stratifiers or equalizers; expensive electronic worksheets or powerful tools to meet important educational goals, depending on the actions that are taken and the policies that are established now.

The role of innovative teachers in this process cannot be over emphasized. They are often the most knowledgeable people in the educational system about computers. Their expertise places them in an important position to influence school policy concerning computers and their instructional applications. The opportunity exists to make schools exciting, rewarding places for all students to learn.

While some of the sources of inequities in our society may best be attacked by changes in organizational structures, teachers who are in close contact with students and technology can significantly influence the way students approach computer use. Teachers are in the best position to create functional learning environments which encourage equal access for all students.

Dynamic Support for Teachers

We discussed the relationship between the learner, the expert, and the computer system in Chapter 2, pointing out the need for dynamic support in the learning process. These same relationships hold when we consider the relationship between the teacher, the students and the computer system in the teaching process.

Riel, Levin and Miller-Souviney (1984) have proposed a continuum ranging from program control to user control describing the relation between teachers and educational software (see Figure 3.1).

Figure 3.1

Types of Educational Software

Static Frames with Fixed Content	Lesson Frames with Content Added	Programming Languages Authoring Systems
<------------------------	------------------------	------------------------>
Program Controlled	Mixed Control	User Controlled

At the program-controlled end of the continuum is software that is designed to be used "as is." Users have little or no opportunity to alter the content or presentation of information in this kind of software. Most Computer Aided Instruction (CAI) software fits into this category. To integrate this type of software into the curriculum, teachers need to organize lessons around the objectives embedded in the software.

Software in which the sequence or other structuring frame is provided and the teacher adds the content is towards the center of the continuum. An example of this type of software is the Square Pairs (Scholastic), in which the teacher supplies the content of a concentration type game and students attempt to make matches. While the content of the software can be easily integrated with ongoing classroom activities, the format of presentation is fixed. Such programs generally provide ways to do "workbook exercises" on the computer and often do not take full advantage of the interactive capabilities of the computer. Programming languages (BASIC, LOGO, PASCAL, etc.) and authoring systems (Interactive Text Interpreter--used to create Interactive Writing Tools, PILOT or QUILL Planners) are at the user control end of the continuum. These systems enable teachers to create instructional materials consistent with their teaching objectives. Though flexible, such systems often require a considerable investment of teacher time to be employed effectively.

Since teachers are learners too, we have found it helpful to employ the same type of "dynamic support" for integrating computer materials into classroom lessons that we did for students learning a particular form of writing (see Chapter 2). The Interactive Text Interpreter is a special purpose authoring system for designing language arts materials. This simplified programming language can be learned easily and enables teachers to use the interactive capabilities of the computer to extend classroom lessons. Teachers with little prior computer experience, however, often lack the confidence and skill to begin by designing their own software. Programming is not the best entry point for teachers who want to use computers in their classrooms.

Teachers generally introduce computers into their classrooms using software developed by others. As they become more familiar with software and witness their students' success they may wish to modify existing software packages. The experience of modifying programs leads directly to the skill needed for writing new programs. The following two scenarios are based on actual classroom observation and interviews (Mehan and Souviney, 1984):

1. One teacher reflected on her initial review of software. Since she knew so little about computers, she felt it was very important that everything run smoothly without her having to make any modifications. Even though she was aware that she could change the software on her own, she initially had no intention of altering programs or writing new ones. As her students began using the software, she became excited by their interest and skill. She watched a number of students who were working with another teacher, learn not only to use software, but to begin writing their own programs. They began programming by first modifying an existing program, and then used these ideas to create their own programs. Student success in using and writing software and the teachers own increased skill in using the word processing system, led to changes in her attitude towards programming. By the end of the year, she said that she was no longer "phobic," but, rather, was excited by the potential of creating her own materials.

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2. Another teacher also started out with minimal knowledge of computers and no exposure to the software described in this book. She was working with young, low-achieving monolingual and bilingual students. She observed that the software available did not adequately support instruction for her students. When this teacher selected software to use with her class, she had to consider whether it was available in Spanish for her bilingual students. After observing the success and failure of her students work with existing software, this teacher decided to try designing her own software materials. After a brief introduction to a word processing system, she began to write her first prompted interactive tool to help students write "friendly letters." Working closely with the author of the English version of the interactive text, she wrote a Spanish version of the program on her own. After a cooperative editing and debugging session, the final version of the program was introduced as a regular component of the classroom instruction. After completing these materials, she wrote an interactive tool for book reports in Spanish and English on her own. This teacher remains excited about the potential to create interactive programs in two languages that fit within her classroom lessons.

These teachers began using existing software and then changed it for their students by substituting familiar names and places for characters and locations, and by changing the on-screen instructions and examples to make them more appropriate for the skill level of their students. After making these changes, teachers began to write their own programs using an authoring system. One of the teachers noticed how much his students enjoyed writing dialogues and wrote a program to help his students extend this skill. Another teacher wrote the set of programs described in Chapter 7, to help her students develop skill in expository writing (Miller-Souviney 1985). Several teachers contributed to the development of the Computer Chronicles to help students learn to write newspaper articles (Levin, Riel, Rowe and Boruta, 1984)

The opportunity to modify existing programs while acquiring the skill and competence to write new ones encouraged teachers to think of new ways the computer could be used to help students acquire important academic skills. Our observations indicate that teachers benefit from the same sequence of dynamic support that works so well with students. A description of dynamic support for teacher use and design of software is shown in Figure 3.2.

Figure 3.2

<u>Dynamic Support for Teacher Use and Design of Software</u>

```
Using Existing        Minor Changes       Using the           Creating New
Interactive           to Interactive      Toolmaker to        Tools
Tools                 Tools               Create New Tools
>-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->-->--
Program                                Mixed                              User
Controlled                            Control                       Controlled
```

<u>Summary</u>. This movement from using previously developed programs, to modifying programs, to creating new programs is what we mean by dynamic support for teachers. Like students, teachers begin by using the computer in productive ways while gaining the confidence and expertise to better integrate the computer into their regular instructional program. Teachers can begin using software developed by others. Through modifying these programs, they learn how the system works. They can then create new, personalized software systems. Modifying initial examples of software and gradually understanding the organization of the system provides teachers with the

dynamic support needed to take a more active role in creating computer materials for use in their teaching.

The Writing Process and the Microcomputer

Moffit and Wagner (1976), Cooper and Odell (1978), Graves (1978) and Florio-Ruane and Dunn (1985) treat writing as a process. The writing process consists of six interrelated stages: (1) pre-writing, (2) writing, (3) response, (4) revision, (5) evaluation and (6) post-writing. In a properly organized environment, computer supported writing systems can have direct application in all six stages of the writing process.

Despite their power, computers are not able to replace good teaching. Computers are not very good at judging the quality of writing, nor do they interpret adequately the human emotions evident in an author's work. While no computer is able to identify a good joke, computers can be powerful tools when used to support the writing process.

An easy-to-use word processing system coupled with interactive software can help busy teachers reinforce good writing habits. As a tool to aid in the writing process, these programs offer students the freedom to express their ideas and experiences by facilitating the composition, revision, and display of student work. The classroom activities described in Chapters 4-8 are examples of lessons we have found helpful in making the computer a powerful tool in teaching writing as a process.

Pre-Writing

Pre-writing involves the organization of thoughts prior to the act of composing. Before writing on paper or at the computer, students often need to "brainstorm" ideas about a topic. This "brainstorming session" identifies appropriate descriptive words and often helps formulate the structure of the writing. Pre-writing can be done in a group session or it can be done individually by each student before beginning a writing assignment. Some teachers prefer to assemble the entire class at once and list pertinent ideas and thoughts on a large piece of butcher paper. Students can then refer to the display of the ideas while composing their writing. Others have their students use a separate sheet of paper to generate descriptive words and organizing phrases.

During this stage in the writing process, a fundamental goal is to motivate the students to write. This can take place by building their observation skills, creating an appropriate writing mood or discussing the audience who will read the final compositions. Many teachers have found that the more time spent motivating the students to write, the better the outcome. The following books and task cards offer an excellent selection of pre-writing activities.

1. *The Language Arts Idea Book* by Joanne Schaff. Glenview, Illinois: Scott, Foresman and Company, 1976.
2. *Cornering Creative Writing* by Imogene Forte, Mary Ann Pangle and Robbie Tupa. Nashville: Incentive Publications, 1974.
3. *The Writing Corner* by Arnold B. Chevrey. Glenview, Illinois: Scott Foresman and Company, 1979.
4. *If You're Trying To Teach Kids How To Write, You've Gotta Have This Book!* by Marjorie Frank. Nashville: Incentive Publications, 1979.

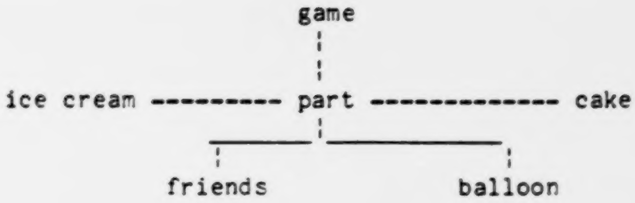
5. A Year of Writing Activities by Dr. I. David Welch & Susan E. Elliot. New York: Scholastic Book Services, 1979.
6. Teaching Writing in K-8 Classrooms: The Time Has Come, by Iris M. Tiedt. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1983.
7. Teaching Writing, K through 8 by Jack Hailey. Regents of the University of California, 1978.

Pre-writing is the process of exploring words and ideas. Word processing systems by themselves are not capable of providing the support needed to generate ideas for writing. They can be utilized in the pre-writing stage, however, as a device to record student's ideas as they brainstorm. Computers make it much easier for students to arrange words in clusters. Gathering words to use in writing is an important component of the pre-writing activity. The goal is to have the students generate as many words (and phrases) about a particular subject as possible. Once a list has been established, student can refer to it when writing the first draft of a composition. Figures 3.3 and 3.4 show two examples of word associations that teachers can use for pre-writing (Tiedt et al, 1983).

Figure 3.3
Column Format

school
desk
teacher
student

Figure 3.4
Cluster format



Other important pre-writing techniques include improvising, making structural charts, outlining and taking notes (Hailey, 1978). Because computers are still novel for most students, entering ideas on them may also motivate student's creativity. A large monitor will be helpful if you use the computer to record class lists.

A relatively new way in which the computer can support the pre-writing activity is with interactive software programs designed to help students organize their thoughts prior to writing. Rather than begin the writing task with a blank screen, the programs draw the student into the writing task by offering suggestions, giving examples, and asking the students to respond to questions. Selection of different options can also lead to guidance on the structure and sequence of the writing.

For example The Computer Chronicles program (Interlearn), provides students with a number of possible newspaper articles to write. The students can select among the options or create new ones. With each of the options, students are asked to further refine their topics by creating a headline and are given help in organizing the structure of their articles. Their responses to questions and other prompts are saved as the first draft of their article.

Examples of commercially available prompted software which can be utilized for pre-writing are: Interactive Writing Tools (InterLearn) Sentence Clustering (Milliken), QUILL Planners (D.C. Heath), Compu-Poem (K-12 Micro-Media). The Quill writing system and Interactive Writing Tools both provide the teacher with tools for creating pre-writing activities for their students to use on the computer.

In the activity section of this book, pre-writing activities both on and off the computer are suggested. For examples of pre-writing lessons, see Activities #5.3, #5.4, #5.6, #6.1, #6.2, #7.1, #7.2, #7.3, #7.4, #8.1, #8.2, #8.4 and #8.5 in Chapters 5-8.

Writing

The second phase of the process is the creation of the first draft of a text. This process involves putting ideas "down on paper" (or on the computer screen). It is the first attempt to flesh out the ideas generated in the prewriting phase. Students' work produced in this stage should not be seen as finished products.

Writing usually takes place off the computer, as an individual activity. Students often benefit from clusters of words and phrases created during pre-writing. Once the initial draft is finished, the students give their essays to either the teacher or peers for their response, the next stage in the writing process.

When computer writing tools are available, the writing process takes place at the keyboard as the composition unfolds on the screen. It is in this composing phase of the writing process that the computer exerts some of its most motivating influence. The ease with which text can be added, changed, moved or deleted makes it easier for students to try new ideas.

The computer also makes cooperative writing much easier. Students frequently work with a partner when composing at the keyboard. This promotes cooperative learning and aids students in their writing. The immediate response of a peer during the initial phase of writing can help students realize how much detail is necessary to communicate an idea. Incomplete idea fragments that might go unnoticed by a solitary writer are often met with, "What do you mean?" or "That doesn't make sense." So often when student writers gets "bogged down" in a particular part of their story, they are apt to give up (perhaps crumpling the paper into a ball and throwing it into the nearest trash can). With the help of a word processor and their peers, students are more likely to move smoothly from pre-writing to writing.

When working with pencil and paper, the phases of writing remain more or less distinct and sequential. Pre-writing precedes writing and response. Computer writing tools make it possible for the writer to work at several stages in a more or less parallel fashion. For example, the Interactive Writing Tools and QUILL Planners can offer onscreen pre-writing activities. Activities included in the Bank Street Writer Teachers Guide help students think about topics and organize their thoughts to create a first draft of text. When these activities are done with peers, the response to initial ideas can provide valuable guidance in shaping the writing. Since the "first draft" written on a computer is nearly always a component of the final draft, editing is more likely to occur throughout the stages of writing when a word processing system is used.

Students can sometimes become too concerned with the final product during the writing phase. One of the advantages of using Planners or Interactive Tools is that they move the students through the production of text without letting them do very much revision. They are told that they will have the opportunity to make changes later when they are working with the word processor. This type of writing software is designed to encourage writing fluency.

The computer can also reorganize the power relations in the classroom. When teachers employ the computer to give students instructions, the source of authority is temporarily altered. Teachers often are able to work more cooperatively, helping their students accomplish goals presented in the software.

Activities #4.5, #4.6, #4.8, #6.3 and #8.6 in Chapters 4, 6 and 8 suggest ways that computer software can be used to help students with the initial composing process.

Response

The next phase in the writing process involves eliciting a review of one's writing by others. In traditional classroom arrangements, students write alone and the teacher reacts to the students' writing. This procedure reduces the author's audience and range of possible reactions. Teachers can consider including students in the response phase, thereby enabling students to cooperate in the production of a single text. This automatically provides ongoing response during the writing process. In order to encourage peer review, it is often useful to group students in pairs or small groups for the sole purpose of reading and commenting on each other's work. This not only gives students more responsibility (and frequently motivation for future writing), but frees the teacher from reading every word the students write.

Another way to encourage students to respond to each other's work is to make an overhead slide of a student's first-draft story (remove the authors name). The entire class can work as a group to give advice on how to improve the story. Students are motivated to offer suggestions since their story may be the subject of peer review the next time.

Another technique for peer review is to have a "read around". Each student's paper is numbered (names removed) and is read by the whole class. Points are given to each paper by each person. After rotation around the room, points are added up and both "good" and "poor" papers are put on overhead slides for discussion.

A printer greatly facilitates the process of peer review. When a student or pair completes an assignment, it can be printed without a name for anonymous reviews. With printed copies, students cannot easy identify the author or be influenced by the appearance of the handwriting. Subsequently, reviewers are forced to deal with the content.

When the review process is done in small groups, each student can print enough copies for the others in their group. Comments can be written with pencil on the print-outs and returned to the writer to help with revision. Authors are able to use the printed copy of their work to make notes for editing later.

The response phase includes comments on the ideas presented, as well as grammar, punctuation and spelling. It may be preferable to have students focus on only one or two aspects of the review process at a time during response sessions. To cover all aspects, response groups might need to meet several times before the writer makes final changes. The first time the group might focus on the ideas presented and their organization, and a second time on the language mechanics such as grammar, punctuation, spelling and capitalization.

Examples of response activities include Activities #6.4 and #8.7 in Chapters 6 and 8.

Revision

Just as expert authors edit their work before publication, so, too, should novice writers. Editing with paper and pencil is often tedious and meets with resistance by students. It is important to stress that teachers need to give students reason and motivation to write. If these are established early in a writing assignment, the revision phase usually occurs painlessly.

Students need to understand that initial writing is only a starting place. Even expert writers often produce many drafts before they are satisfied with a piece of writing. Teachers can help students understand the need for revision by sharing revised editions of their own personal writing. Seeing that adults, too, need to revise their writing helps student view revision as a normal component of the writing process. It may also help to show a piece of writing from the class the year before (especially a paper which began with clustering and moved through the process to the final draft). Students can compare the first and final products to see quality differences. Perhaps a local newspaper reporter can be invited to talk with students about the steps he or she goes through when producing an article.

Some teachers find it helpful to clearly mark the difference between early drafts and final ones. Early drafts can be written on newsprint with pencils, while special pencils or pens and "good" paper can be used for final copies. Such organization on the teacher's part is minimal, and helps students avoid the mistake of viewing first drafts as final products.

The computer can help the revision process in two important ways. First, it aids the teacher in creating functional writing environments in which students care enough about their writing to do the work of revision. Second, it make the process of revision much less tedious.

Computers coupled with printers make it practical for teachers to create many different types of writing tasks that the students will find meaningful and motivating. Sharing handwritten information is difficult, and poor handwriting often negatively influences the reader. The production of printed text makes it easy for others to read and can be used to create a number of different end products that will motivate students to revise their texts.

Word processing editing systems reduce the frustration associated with revision. When students make corrections, they do not then have to recopy the entire work. The number of times students change or "erase" a word or phrase while they are composing is not reflected in their final text. The screen does not tear or smear, and the spacing of letters remains uniform. It is possible to insert a sentence or paragraph in the middle of the text without squeezing words in between. Students introduce fewer new errors while making corrections using the computer (Levin, Riel, Rowe, and Boruta, 1984). The final product also looks so professional that students are more likely to share their work at school and at home.

The natural time to revise a text is after response groups have met and analyzed the student's individual texts. Often there is not enough time for everyone to review composition for possible changes while working on the computer. Therefore, suggested changes should be marked on printed drafts. Writers can then use their assigned computer time to make changes in their own composition using the annotated printed copy as a reference. The final draft can be saved on the student's text disks and subsequently printed.

Activities #5.3, #5.5, #6.5 and #8.8 in Chapters 5, 6 and 8 are examples of how revision of already entered text is an effective way to introduce students to a word processing system. It is this ease of revision that seems to motivate students to learn how to write using a computer.

Evaluation

For most writing that is done in school, students write and teachers correct. The approach to the writing process advocated by Cooper and Odell

(1978) and others encourages more input from peers and other adults. These could include classroom aides, parents, principals or custodians.

The advantage of using the computer in the evaluation phase of the writing process is the capability it has to produce, with the aid of a printer, neat and professional looking copies. It is useful to display both first and final copies side by side for the students so that they can see, firsthand, the progress they have made. Not only is growth measured in this way, but it may motivate students to improve their writing in future assignments.

It is also possible, with some pieces of software, to have the computer provide some form of evaluation of the students writing. For example, Sensible Speller (Sensible Software) can be used to mark misspelled words as well as provide information about the number of misspelled words, the total number of words and number of unique words. The Writer's Assistant and the Interactive Tools can be used to collect data on how students write. For example, the number of corrections made or the number of times a particular word has been used can be automatically collected for later review by the teacher while the student is writing.

Student evaluation of other's writing constitutes a vital part of the Computer Chronicles Newspaper project described in Chapter 8 (see Activity #8.9). Students serve on Editorial Boards to review and evaluate articles written by their classmates and students from other schools. An Editorial Board is a small group of students who are responsible to read and evaluate articles for possible inclusion in the classroom newspaper. This peer evaluation adds new dimensions to the writing process. The teacher, in this case, serves as facilitator while the students themselves take on the more active role of evaluating articles for their newspaper. The concept of an Editorial Board could work well for other kinds of writing as well. Activity #6.6 is another example of evaluation.

Post Writing

Post writing refers to the activities that involve the display or presentation of writing to others. Writing that is "published" for others to read helps students understand that communication with self or others is the goal of the writing process.

Assembling class books, posting final compositions on office bulletin boards and inviting visitors to the class for a "reading" are all ways in which the final products of writing can be shared. Some teachers have found it beneficial to "adopt" another class at their school which always hears readings of new compositions first. Older students (grades 5-8) can create stories or a book for a younger class (Kindergarten or grade 1). They can interview the younger students first to get ideas (pre-writing) and then create a motivating story for their adopted friends to read.

Students are often motivated to write if the materials created are subsequently donated to the school library at the end of the year. In this way, other students can read the work of local authors. However student writing is shared or displayed, it is most important for writers to know that their work will be displayed in some way.

Microcomputers and printers make it much easier to share writing. The computer prints out a professional final copy. You can display printed compositions in books as well as on bulletin boards. Microcomputers linked to networks via modems open up new channels of communication. This technology now makes it possible for students across town or around the world to read and evaluate the writing of their peers. By having students communicate with others via an informal "newswire service" such as the one described in Chapter 8, a ready made social studies lesson inevitably occurs as the class discusses the ways their counterparts live.

Suggestions for post-writing activities are described in Chapters 5-8. Sending letters (Activities #5.3 and #5.6), making class books and displays (Activities #6.7 and #7.4) and publishing a newspaper (Activities #8.10), are all ways for students to share their writing with a larger audience than school usually affords.

How a Computer Works

This section describes the function of the basic parts of a microcomputer. Teachers who are new users of microcomputers may find this overview helpful as they prepare to introduce the activities in Chapters 4-8. It is increasingly important for teachers to become familiar with the potential and limitations of using microcomputers as tools for learning. While programming skills may not be essential, it is important to know how to operate a microcomputer and evaluate instructional software written by others. Computer programs, or software, are detailed lists of instructions which enable the computer to function as a word processor, a data base manager, a game world, or in many other specialized ways.

Thousands of programs are available for popular microcomputers. Good software, like a good books, requires considerable creativity and skill to produce. Like other instructional materials, each product should be carefully evaluated by the teacher prior to use.

Microcomputer Components and Functions

Several versatile microcomputers are marketed for personal and classroom use. Prices for remarkably flexible systems range from under $300 to several thousand dollars. All microcomputers have several "hardware" features in common:

1. Input device -- keyboard
2. Output device -- monitor or printer
3. Microprocessor and memory -- central processing unit (CPU), random access memory (RAM) and read only memory (ROM)
4. Data Storage Device -- floppy disk drive or cassette tape recorder

The keyboard is the most common device for entering information into the computer. Like a typewriter, some keys are used to enter letters and other characters while others, like the TAB key, issue commands to control the position or format of the displayed text. The computer software communicates with the user on the monitor screen. Instructions, questions and graphics can be presented to assist in the operation of the software. When using a word processor, the text entered on the keyboard is also displayed on the monitor screen.

When finished writing, a permanent copy of the text can be made using another output device, the printer. Printers range in price from under $200 to well over $1000. The more expensive printers are quieter, sometimes faster and produce higher quality type. Most inexpensive printers create the characters by arranging tiny dots (dot-matrix). While not as pleasing to the eye as solid type, these devices are quite adequate for most educational applications. In fact, another advantage of a dot matrix printer is that the dots can also be arranged to print computer generated graphics.

While writing on the computer, both the word processing program and the text being written are generally stored in temporary memory called RAM (Random Access Memory). Most word processors require that the computer have a minimum of 64 kilobites (64K) that is, 64,000 characters or memory. When a word processing program is loaded into the computer from either a disk or a tape, a copy of the program is stored in RAM so that the computer will be able to access it quickly. (For large programs the computer may load in only part of the program at a time to save room for the text.) Any information typed into the computer must also be stored in RAM. Therefore, part of RAM is used to store the word processing program and the remainder is available for storing text entered by the user. This is why there is a limit to the size of the textfiles you can write. Most word processors leave enough space in RAM to write about 5-10 double-spaced pages of text in a single textfile. However, this does not mean that there is a limit on the length of the text that is written. Several textfiles can be selected and printed sequentially.

Information stored in RAM is temporary. If the computer is turned off, any information stored only in RAM is lost. The word processing program remains on the disk; but any text entered through the keyboard (input device) and not stored on a disk, tape, or printer (data storage devices) will NOT be saved. All word processing programs have procedures for storing text. It is most frequently stored on a permanent data storage device such as a floppy disk or cassette tape. Often it is a different disk or tape than the one used to store the word processing system itself. This allows more space on the disk to store text.

A convenient form of mass data storage is the floppy disk. Like a cassette tape, information can be recorded on a magnetic "floppy" disk inserted in a disk drive (a "floppy" disk is flexible while a more expensive hard disk is like an LP record). Unlike a cassette, however, information can be retrieved from a disk in a matter of seconds. Normally, about 100 double spaced pages of text can be recorded on one disk, and there is no limit to the number of disks that can be used to store writing. Word processing software generally provides a way for the user to make up new text storage disks from blank disks. Remember, just like cassette tapes, disks can be damaged by magnets, heat and finger prints.

To enable all these devices to work in unison, every computer has a "central processing unit" (CPU). The hardworking CPU is one of the large black "chips" inside the computer's case. It is a very complex set of circuits which carries out the instructions imbedded in the software, interprets input from the keyboard, keeps track of information in the memory (RAM), communicates with the user through the monitor screen and printer and manages the flow of information to and from the disk drive. The CPU can also call on information permanently stored in several "read only memory" chips (ROM). This type of memory contains information that is used frequently when running many different types of software, and is therefore built into the computer to improve efficiency.

As computer technology advances, improved printing, data storage and input devices will become available. Laser printers have the potential for generating letter quality type at current dot matrix costs. Solid state memory cartridges are much faster than disk drives and as prices become competitive, may replace floppy disks on microcomputers. Software is already beginning to take advantage of new input devices like the Apple "Mouse" and Koala "Touch Pad". These handy devices facilitate the use of word processors, graphic design software and other tools. The basic functions of the components remain largely unchanged, however, regardless of the input, output or storage device employed.

Software Evaluation

To help teachers select quality software, several organizations evaluate software products and report the results in an easily accessible form. Many popular magazines specializing in computers and education have sections devoted to software evaluation. The Northwest Regional Educational Laboratory supports the Microcomputer Software Information for Teachers. The (MicroSIFT) Project uses teachers to evaluate a wide range of existing software and reports the results in popular computing magazines and the Education Research Information Center (ERIC) data base. Often a local group of computer using educators (CUE) can provide the most up-to-date information on available software and may provide access to a software-exchange network.

It is always good practice to preview software before it is purchased. Many companies offer liberal preview policies for educators. Since high quality software is generally costly, make sure the publisher is reputable and agrees to replace the product at minimum cost if it is defective or becomes damaged. Consider the following characteristics when selecting software for classroom use:

1. Does the software take advantage of the new technology to present activities that are different than those accomplished using other tools? Many computer activities can be accomplished more efficiently using another technology. If the software is a workbook on disk, it may be more efficient to use traditional technology (eg., workbooks).

2. Can the computer activity be integrated with other other aspects of your curriculum? The computer is a tool to be used by teachers to accomplish their educational goals and not a teaching machine that operates independent of the rest of classroom activities.

3. Are the instructions adequate? All necessary instructions to run the program should be displayed on the screen in a continuously displayed instruction window if possible.

4. Does the student control the screen advance? Students vary in the rate at which they will be able to move through activities. Advancing to the next page should be controlled by the student, not automatically timed.

5. How does the program handle incorrect responses? Insults, sarcasm and derogatory remarks are not helpful responses to student errors. Students' character should not be compromised.

6. Is there an audible response to student errors? No student should be

forced to advertise mistakes to the whole class.

7. Does the program disproportionally reward failure? Some programs give more interesting screen displays when students give incorrect answers than correct ones. It should not be more fun to fail than to succeed.

8. How does the program react to errors? Software should be written so that it will not "crash" if the user accidentally types the wrong key. Incorrect responses should lead to software initiated help or instructions.

9. Can sound effects be controlled? While sound can be motivating, it can also be disruptive to other educational activities. The teacher should be able to easily turn sound on and off.

10. Are there any factual errors? Information displayed must be accurate in content, spelling and grammar.

11. Does the documentation explain how to use the software and provide suggestions for classroom applications? Demand the same quality of teachers' guide as you do of a text book or other teaching aid.

12. Is there a reasonable means for acquiring a back up copy of the program and replacement for damaged disks? Publishers should recognize the unique vulnerability of magnetic disks and offer low-cost replacement.

Getting Started

For an Apple II computer, first place a software disk in the drive and close the door. Turn the monitor and the computer on.The computer should beep and the disk begin to spin. If the drive buzzes loudly, try opening and closing the drive door. If, after a minute or so, nothing appears on the screen, check to see in the monitor is on, if the power plug is connected to the computer and if the contrast is properly set. If none of these are the source of the problem, try turning the computer off and on again.

Good software provides substantial on-screen directions and other help to enable the user to begin quickly. As with any instructional material, it is always a good idea to try the software yourself before introducing it to your class. For additional information, consult the documentation supplied with the software and the computer.

Summary

In this chapter, we have described the use of the computer as a tool to support the writing process. As such, it serves as a transition between the general framework of our approach presented in Chapters 1 and 2 and the specific language arts classroom activities presented in Chapters 4-8.

Teachers, as well as students, can benefit from a system of dynamic support. Teachers can begin by using software developed by others and getting advice from more experienced educators in their area. As teachers become more familiar with the limits and possibilities of computer uses, they may begin to modify existing software, or, in some cases, design their own. Gradually, the need for outside support will diminish as teachers gain confidence in selecting and using language arts (and other) software in their classroom.

Since the language arts activities that are presented in Chapters 4-8 are the product of dynamic support, they cannot be expected to stand on their own. They are intended to be provocative guidelines for the innovative teacher, not definitive instructional packages to be implemented as written. It is our hope that teachers will continue to experiment with creative ways to use computers in their instruction in order to provide equal access to computer technology for all children.

CHAPTER FOUR

INTRODUCING THE CLASSROOM COMPUTER

by

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__Overview of Classroom Activities__. Chapters 4-8 contain sets of activities designed to introduce the use of a word processor for writing in grades 4-8. Only minimal computing experience is assumed on the part of the students or teacher. The first set of activities, "Setting Up a Computer Center," offers several ideas for introducing the computer to your class. The "Writing Letters" unit introduces the word processor for student writing. The remaining activity sequences take the writer through the six steps of the writing process as described in Chapter 3. "Writing Haiku Poems" and "Expository Writing" offer structured writing experiences for these two specific types of writing and the final set of activities, "Classroom Newspaper Writing," provides a guide for the development of a classroom or school newspaper using articles written by students, and perhaps those from other classrooms or schools. With access to only one classroom computer, these activities can be completed by all the students in a class over the period of a school year. Depending on student interest, many of the activities may be repeated. Some of the writing activities do __not__ require a computer and others do.

In order to make the activity instructions as specific as possible, the Apple IIe computer and selected software are employed as examples. Other machines and appropriate software can be substituted as required.

Classroom Organization. While computers can be used to help teach the writing process in a lab setting, this book offers guidance to the teacher who is using the computer in the classroom. The assumption is that the teacher has one computer with one disk drive and access to a printer. The availability of but one computer for 30 or more students presents teachers with the problem of facilitating equal access. Providing equal access to all students depends on a systematic management system which effectively utilizes the computer time available. Since an important principle of any computer management system is independence, students need to be encouraged to become independent computer users who do not constantly seek help from the teacher.

Computer technology is likely to influence everyone's lives in the future; it is important for teachers to insure that boys and girls of all achievement levels and socioeconomic backgrounds be included in computer activities. Careful scheduling is vital in order to accomplish this goal. In order to effectively use a computer in the classroom teachers must determine appropriate educational goals for students, plan the curriculum and identify areas where the computer can be used to help accomplish these goals. Several organizational decisions must be made about ways to make the computer a part of the classroom learning environment. Some of these organizational decisions concern the use of time and space in the classroom. Teachers must decide how many students will work at the computer at one time as well as determine the length of work periods, the content of the instruction, and how the computer activities coordinate with learning experiences throughout the school day.

Computers fit easily into classrooms which are organized to include learning centers. A "computer center" becomes a natural complement to this type of classroom arrangement. It is important to establish the educational goals for a computer center just as for any other learning center or activity. Likewise, the planning and work that goes into the design of any activity center is the same planning and work that goes into the design of a computer center. Once activities for each center are determined, students must be allocated to work groups, time at each center must be rationed, and the coordination of activities between centers must be arranged. Detailed activities for setting up a computer center in a classroom are described later in this chapter.

The activities in this book were written by teachers who have found it effective for students to work in pairs at a computer center. Each pair of students can be scheduled for 25-30 minute periods through the school day, which means that each student should receive two sessions per week at the computer. Recent studies of computer-supported writing indicate that two students collaborating at the keyboard obtain cognitive and social benefits which do not accrue to students working alone (Mehan, et al, 1985; Trowbridge and Durnin, 1984). Paired workers have also been found to interrupt the classroom less frequently than students working alone.

Introducing the Computer. Teachers working with a computer for the first time often find it helpful to first organize a whole class demonstration of computer operations and the basic word processing features.

First, introduce students to the computer keyboard. Although the layout of the computer keyboard is similar to that of a typewriter, there are some important differences. There are a number of "control keys" that elicit special features of the computer operations. A number of commercial programs promote familiarity with the keyboard. These include Kids on Keys (Spinnaker), Typing Tutor (MECC), Master Type (Lightening Software) and Apple Presents Apple (Apple Corporation). These programs help students develop familiarity with the keyboard without separating the development of computer operation skills from the larger task of learning to write with a computer.

Wall displays are also helpful to promote computer familiarity. For example, a giant sized keyboard display can be made by writing each letter and symbol on a styrofoam take-out hamburger carton and arranging them on a bulletin board in a configuration matching that of the computer keyboard. Constructed early in the year, this display can become a ready reference for children first learning the character positions. Likewise, conveniently placed written instructions facilitate students' learning of computer skills. Placing posters and cards with instructions about the care and feeding of the computer, basic text editing commands, and special instructions for each assignment also serve as helpful reminders. Access to one or more old typewriters increases the amount of classroom keyboard experience available to the students.

Teachers have found it helpful to set up a "typing center" to accompany the computer center. Activities scheduled for this center might include the typing of spelling lists and vocabulary words, writing letters and messages to other students and working on structured typing lessons involving home-key placement. It is important to keep in mind that it is not necessary for students to become proficient typists in order to operate the computer's keyboard. However, students' enjoyment and proficiency are likely to increase with keyboard mastery.

Setting Up a Computer Center. A Computer Center allows students maximum access to a limited amount of specialized equipment without removing the students from the classroom. It also gives students an opportunity to gain computer operation skills within standard curriculum. A learning center arrangement also offers the teacher a range of scheduling options within the classroom.

The following activities set out a plan for implementing a Computer Center in a standard classroom. The activities assume full-time access to one computer with a single disk drive and a printer. Upon completion of the series of activities in Chapter 4, grade 4-8 students should be able to:

1. Boot and run other software designed for instructional purposes.
2. Demonstrate basic aspects of computer operation, text storage and disk management.

--- Insert figure 4.1 about here ---

ACTIVITY #4.1 -- THE PENCIL AS WORDPROCESSOR

Objective. To introduce the teacher and students to the concept of word processing with a computer by comparing writing with a pencil to writing with a computer.

Time Allotment. 30 minute whole group session

Materials.
- A pencil with an eraser
- Writing With a Pencil Chart (#1 in Appendix)
- Writing With a Word Processor (#2 in Appendix)
- List of word processing features (see below)

Procedure. Once you know how to use a computer for writing, it is easy to take the concept of word processing for granted. For the novice, it may be useful to take some time to introduce the idea of writing with a computer using a more common technology, the pencil.

A good way to introduce a new idea is to compare it to something that is well known. In this case, you can draw an analogy between one of the most widely used forms of technology for writing, the pencil, and the computer. Ask your students to imagine that someone who had never seen a pencil had just bought one and you had to give written directions on how to use it. Your directions, or documentation, might look something like the following (see #1 in Appendix):

--- Insert figure 4.2 about here ---

Writing With a Pencil

To Write:

1. Move the PENCIL to a place where you wish to write.
2. PUT THE LEAD POINT DOWN.
3. Write the words.
4. When finished, LIFT THE PENCIL.

To Erase:

1. Move the PENCIL to the spot you wish to erase.
2. PUT THE ERASER END DOWN
3. Move the ERASER to remove the words.
4. When finished, LIFT THE PENCIL.

Demonstrate each of the PENCIL steps. Next, introduce the computer word processor as a new technology for writing that is in many ways very similar to using a PENCIL. It also comes with documentation on how to use it. The following is a similar list of steps for writing and erasing with a word processor. Notice that the only changes in instructions are the capitalized words. These instructions are specifically written for The Writer's Assistant. You can easily change the commands on the task card to coordinate with another word processor.

Writing With a Wordprocessor

To Write:

1. Move the CURSOR to the place where you want to write.
2. PRESS I FOR IN.
3. TYPE the words.
4. When finished, PRESS CTRL-C.

To Erase:

1. Move the CURSOR to the spot you wish to erase.
2. PRESS D FOR DROP
3. Move the CURSOR over the words to be removed.
4. When finished, PRESS CTRL-C.

If you have a computer with a large monitor, you may wish to demonstrate each operation, or it is often just as effective to operate an imaginary computer. Emphasize the way in which the "documentation" for the two methods of writing are very similar. Since they all know how to use a pencil, they can use this knowledge to help them learn how to write using a computer.

Finally, discuss the differences between the pencil and computer writing technologies. First, the pencil is a two function writing tool, write and erase. Though the computer is like a pencil, it has many more functions and capabilities. Show a list of categories of word processing functions like the following (for The Writer's Assistant):

1. Changing Text -- Insert, Drop, eXchange, Replace, Word
2. Moving Through Text -- Page, Jump, Find
3. Moving Text Around -- Mix, Aline, Transfer, Copy

4. Adjusting the Writing Environment -- Set Parameters

Some word processing systems also allow users to see the instructions for each command (documentation) on the screen while they are writing. While it would be difficult to write the directions for using a pencil on the pencil itself, the computer has no problem storing such information for us. In the Writer's Assistant, the Help command tells you how to use any of the other features.

ACTIVITY #4.2 -- DEVELOPING FAMILIARITY WITH THE KEYBOARD

Objective. To familiarize students with the typewriter keyboard and to provide an opportunity for them to practice and increase typing skills before actually using a computer.

Time Allotment. 5 minute whole-group session
30 minute session per week for each student pair for 2-3 weeks

Materials.
- One or two typewriters
- Typing paper
- Typing Center Task Card (#3 in Appendix)
- Typing Center Directions (#4 in Appendix)
- Rotation and Schedule (#5 and #6 in Appendix)

Procedure. In a whole group session, give a brief overview of the center. Demonstrate how to turn the machines on and off (electric typewriters), how to insert paper, and the functions of the shift, tab, and return keys.

Schedule students to work in the "TYPING CENTER" in pairs for a 30 minute period once a week for two or three weeks. Set up the typewriters in a convenient area of the classroom. Make sure the necessary materials and task cards which describe the typing activities are readily available. Posters displayed at the Center are used to provide instructions on proper use and care of materials (see examples below).

--- Insert figure 4.3 about here ---

ACTIVITY #4.3 -- INTRODUCING THE COMPUTER

Objective. To help students become familiar with basic machine operation and to learn to run a piece of software.

Time Allotment. 45 minute whole group session

Materials.
- Apple II Computer
- Apple Presents Apple, Typing Tutor or Kids on Keys software
- Disks, storage box, table

Procedure. Arrange the class so everyone has a good view of the computer. Ask your students the following questions to gauge their current understanding of the function of the basic components of a microcomputer.

SAMPLE QUESTIONS

a. Can you name the parts of this computer? (keyboard, monitor, disk drive, central processing unit and memory)

b. Who can tell what each part does? (keyboard used to enter information; monitor used to display information; disk drive used to record information on disks; CPU is the "brain" which controls and manipulates information; memory temporarily stores information for the CPU)

c. How do you turn the machine on? (This will vary from machine to machine.

d. What is a disk used for? (floppy disks are used for long term storage of information)

e. Can anyone describe how a computer works? (information entered through the keyboard is processed by the CPU, stored in temporary memory and the results may be displayed on the monitor screen or saved on disk)

--- Insert figure 4.4 about here ---

Answers to questions like these should help guide additional instruction required to complement students' current knowledge. Students with more computer experience should be able to provide valuable information for "novices." Try to let the students give information in their own words as much as possible.

After identifying the basic components, have a student follow your directions for inserting the Apple Presents Apple disk into the drive and turning on the machine. Use this opportunity to have students role play proper care and treatment of equipment. Have them formulate common sense rules for usage, generating charts of rules and directions to be used later at the Computer Center.

Once the Apple Presents Apple software has been "booted" it should be self explanatory. Clear instructions for its use should appear on screen. Have students take turns following the screen-displayed instructions so that as many students as possible have an opportunity to use the computer. Allow students to run through as much of the program as their interest allows. It is not necessary for them to see the entire program since they will have ample time working in pairs during the next activity.

Be sure to allow adequate time for a review at the end of the demonstration. Have students demonstrate the correct procedures for inserting the disk, turning on the machine and so forth. It is useful to have students ask each other questions concerning these activities since attention is likely to be focused on the least understood areas.

--- Insert figure 4.5 about here ---

ACTIVITY #4.4 -- USING THE COMPUTER CENTER

Objective. To learn how to run a piece of software (*Apple Presents Apple*) in the Computer Center.

Time Allotment. 5 minute whole group session
30 minute computer session for each student pair

Materials.
- Apple II Computer
- *Apple Presents Apple*, *Typing Tutor* or *Kids on Keys* software
- Computer Help Charts (#7, #8 and #9 in Appendix)

Procedure. In a 5 minute whole group session, go over the schedule for working in pairs at the Computer Center. The general rules in effect for using a center in the classroom should apply. Emphasis should be placed on following the instruction charts displayed at the Center and the directions presented on the computer screen (see #7, #8 and #9 in Appendix).

A consistent procedure should be established for requesting help in times of difficulty. Though methods are likely to vary from classroom to classroom, you might select two or three "computer tutors" for special training who have demonstrated a clear understanding of the computer operation procedures and are able to do problem solving independently.

Consider appointing a child who has not met with much success at school in the past to be a computer tutor. This experience will provide that child with a new opportunity to excel in the classroom.

Schedule students into the Center in pairs, throughout the day if possible, for about 30 minutes each. Everyone should have an opportunity to run _Apple Presents Apple_, or one of the other suggested programs, in a period of one week. Depending on student interest, you may want to extend the activity for an additional week using the same software.

The microcomputer, monitor, disk drive, and software storage container should be set up similarly to the Computer Center Diagram. Although placement of the center will depend in part upon the availability of electrical outlets, the Center should be oriented so that the screen is not easily visible from the rest of the room. Do not place it in close proximity to any major teaching areas; however, it should be within view of the teacher from most areas of the room. It should be enclosed on three sides to limit access to the area. There should also be adequate display space for posting written directions. Center direction charts should be clear and concise. Because of the nature of the software program used for this activity, the teacher may expect very little difficulty for students in operating the program itself, but support may be needed in hardware use and commands.

ACTIVITY #4.5 -- WRITING WITH INTERACTIVE SOFTWARE

Objective. To introduce procedures for using Interactive Writing Tools without saving text on disk.

Time Allotment. 30 minute whole group session

Materials. - Apple II (64K) Computer
- Interactive Story Writing Tool (*Narrative Writing Tool* by InterLearn, *Story Tree* by Scholastic or *Storymaker* by Bolt, Beranek and Newman)

Procedure. Group students so that they are all able to see the monitor. Explain that the computer can be used as a sophisticated kind of a typewriter and that they will learn how to use a computer program to help them write stories, poems and letters. Ask for a volunteer to insert and boot the story writing program (eg., Narrative Writing Tool). Having students assist in demonstrations provides an opportunity for the review of command procedures.

Once the program has been "booted" (entered into the computers memory), students should be able to follow the directions displayed on the screen to complete the writing task (though they may need to be reminded occasionally). When the story is finished, the Narrative Tool program asks the student to name the text in order to save it on a disk. For this activity, students will not save their text (see Activity #4.7 for Saving text).

The following sequence is for Interactive Writing Tools. Other programs do not allow the students to save their work.

You will see:
Name for your text?

Press ESC (for Escape) and text will not be Saved on disk.

You will see:
Do you want to see the text on the screen?

Press Y (for Yes) and the story will be shown on the screen.

If a printer is attached, you will see:

Do you want to print the text?

Press Y (for Yes) and a copy of the story will be printed.

Encourage students to run the program with as little teacher assistance as possible. It is important to establish the practice of relying on screen directions and one's partner for help. If you use computer-tutors, remind the students to call upon them in times of trouble. Interactive Tools (InterLearn) are self explanatory and work well for this activity. Students enjoy making the prompted choices and entering their own text as they work through the activity.

ACTIVITY #4.6 -- INDEPENDENT USE OF INTERACTIVE SOFTWARE

Objective. To create stories independently using Interactive Writing Tools.

Time Allotment. 30 minute computer session for each student pair

Materials. - Apple II (64K) Computer
- Interactive Writing Tools (InterLearn) or Storymaker (BBN)

Procedure. Following the Computer Center schedule, students work in pairs to generate stories by following the posted directions and screen displayed instructions. Students should be encouraged to create as many stories as their time allows. Students should not save this first set of stories on disk. The compositions should be displayed on the monitor and printed. You may want to have the students print two copies of their stories, one for the teacher and one to take home.

--- Insert figure 4.6 about here ---

ACTIVITY #4.7 -- SAVING YOUR WORK: INTRODUCTION

Objective. To learn the procedures for storing student stories on disk for later editing.

Time Allotment. 30 minute whole group session

Materials
- Apple II (64K) Computer
- Interactive Writing Tool Software
- Text storage disk (WA-TEXT: *Writer's Assistant* Text Disk)
- Naming It Chart (#10 in Appendix)
- Naming Codes Chart (#11 in Appendix
- Saving It Chart (#12 in Appendix)
- Finding It Chart (#13 in Appendix)

Procedure. Seat students where they can all view the monitor screen. Boot an Interactive Tool disk and allow students to make text selections as you enter their choices. When you have completed a story, discuss with students the disadvantage of losing the text when they quit the program. Explain that there is a way of saving the story in a "computer notebook" so they can look at it again later. Display the step by step instruction charts for *naming* and *saving* text on disk. (Post Charts #10, #11, #12, #13)

Several methods can be used for selecting names for files which will make it easy for students to identify their story at a later date. One system should be agreed upon and established in order to minimize disk management problems as students create more and more text to be stored and retrieved.

Encourage students to read and follow the direction sequence for saving, displaying and printing text after the composition is completed. Allow students to make mistakes and use the opportunity for trouble shooting. When you have successfully demonstrated the series of directions for storing text on the text disk, review the procedure several times by having individual students demonstrate the complete sequence.

--- Insert miniature of Appendix #9 ---

ACTIVITY #4.8 -- SAVING YOUR WORK: PRACTICE

Objective. To learn how to store text created with Interactive Writing Tools on disk for later editing and printing.

Time Allotment. 30 minute computer session per student pair for one or two weeks

Materials.
- Apple II (64K) Computer
- Interactive Writing Tool (InterLearn) software or other prompted writing programs
- Text storage disk (WA-TEXT: Writer's Assistant Text Disk)
- Direction Charts (#10, #11, #12, #13 in Appendix)

Procedure. Schedule pairs of students to work at the Computer Center. Using wall charts showing necessary computer commands and screen displayed directions, have the students use the same Interactive Writing Tool as in the previous activity. When the students have completed the task, have them name and save their text. It may help to appoint a "computer tutor" at this time since the initial use of the two different disks (Tool disk and Text disk) may create confusion for some students. You may want to extend this activity into a second week, depending on how quickly your students learn to manage the commands for saving text on the Text Disk. Once they have saved their stories created by the prompted writing environments

(Interactive Writing Tools), students are ready to learn how to use a word processor to make changes in their work. Chapter 5 presents a series of activities to introduce the word processing to your class.

--- Insert figure 4.7 about here ---

CHAPTER FIVE

WRITING LETTERS: LEARNING THE EDITOR COMMANDS

by

Barbara Miller-Souviney

Randall Souviney

The aim of the set of activities in Chapter 5 is to teach students to use a word processor. Word processors generally contain a dozen or more editing commands to allow making changes in the content or format of a composition. Beginning students, however, only need to learn a few commands to get started writing. Once they have learned the basic commands to Insert, Drop and Save text, students should be ready to begin writing letters. As they gain experience, additional commands may be introduced. Teachers have found it efficient for students to practice editing previously entered text or compositions created with prompted writing environments like Interactive Tools (InterLearn). Students can use text created by a prompted Interactive Tool like The Letter Writer (InterLearn), the QUILL Mailbag (D.C. Heath), or a letter previously entered by the teacher. Letters containing errors give students practice using a word processor to make repairs. As students become skilled, they should be able to compose text directly on a word processor.

Without careful management, students and teachers may lose track of text files or may create a text file with the same name as another student. Two files can not have the same name on a disk. To avoid such problems, students should be divided into groups and assignd to a text disk labeled with a number or colored sticker. Usually, 4-6 elementary students can be assigned to a disk without filling it too quickly. Older students may require their own disks. It is helpful to post a list of students using each disk to make it easier to find the correct disk when writing or editing previous drafts. When a disk becomes filled, old files can be printed and removed, or a new disk can be created.

General Overview. The following set of activities will help students understand and use a text editor (The Writer's Assistant, Quill or other word processing system) to write letters. By using simple editing commands (In, Drop, Quit, Update), students will learn to write letters which can be exchanged with "computer pals" in other classrooms. By using the computer to create new audiences, students will see the communicative value of using the computer as a tool for writing.

Any text editor can be used with the following activities, however, the examples use The Writer's Assistant (InterLearn) which is also used in QUILL (D.C. Heath). It is not necessary to know all the features of a text editor system before introducing it to young children. The following editing commands, along with cursor movement commands, will allow students the opportunity to engage in many different writing activities for a year.

Editor Commands for The Writer's Assistant

I = In for typing in text
D = Drop for removing text
H = Help for learning commands
Q = Quit for saving text
CTRL-C = CONTROL-C (to keep or "lock in" text)

Cursor Movement - LEFT and RIGHT ARROWS, TAB (Apple IIc and IIe)
RETURN, SPACE, UP and DOWN ARROWS (Apple IIc
and IIe) or O = up, L = down (Apple II and II+)

As students gain editing experience, more sophisticated commands can be introduced. Teachers should review The Writer's Assistant User's Guide or the QUILL teacher's guide to make sure they are familiar with the function of each command. As in all writing activities (with or without the computer), large group demonstrations are well advised prior to individual work with the computer. Large charts listing the editing commands and other directions posted near the computer help students to stay on task and become independent.

If any of the "Interactive Writing Tools" (Interlearn) are used to compose and save text on a Text Disk, the results may be edited directly utilizing The Writer's Assistant.

As students begin to generate larger amounts of text, it is important to systematically organize student work on disks. When students enter and store a piece of writing (text), a disk "file" is created and stored on the Text Disk. The length of a file name is limited (eg., 10 characters for The Writer's Assistant). You may wish to use a special code for naming files (like the students' initials) to help keep track of the large number of files created during a few weeks of writing (see #10 in Appendix). The following three methods for organizing student files on disk have been successful:

1. Topic Disk. For this simple method of management, a disk is labeled with the name of the current writing topic (eg., Haiku poetry, newspaper articles, letters). Every student in the class uses this disk to store files by naming them with their initials or first names. As new topics are introduced to the class, new disks are labeled and kept near the computer. Other topic disks can be kept for future activities. This method works best for beginning writers.

2. Group Disk. Another method of organizing student files is to color code disks according to existing student groupings (eg., reading groups). Each group of 4-6 students always stores their text on the same disk marked with the appropriate colored dot. In this arrangement, each file named should include information about the writer and the activity topic. As new topics are introduced, old files can be moved to a storage disk or removed using The File Cabinet, or a new disk can be created.

3. Individual Disk. As students gain facility using the word processor and begin to write longer files, it may be more convenient to issue each student (or pair of students) a personal Text Disk. All personal writing can be stored on this disk. In this arrangement, only information about the topic and perhaps the date need to be included in the file name. Over the course of a year, new Text Disks may need to be added, or old files can be removed as necessary.

After completing the activities in Chapter 5, students should be able to:

1. Operate a microcomputer with sufficient skill to compose and edit an

original text using a work processor.

2. Write a friendly and a business letters utilizing the correct format.

---Insert figure 5.1 about here ---

ACTIVITY #5.1 -- MOVING THE CURSOR

Objective. To learn how to move the cursor around the screen.

Time Allotment. 30 minute whole group computer session

Materials. - Apple II (64K) Computer

- *Writer's Assistant* System Disk (WA-SYS:), *QUILL* system disk or other word processor
- Text Disk to store students' work (WA-TEXT:)
- Cursor Movement Chart (#14 in Appendix)
- Paragraph stored on WA-Text: Disk
- Cursor Movement Task Card (#15 in Appendix)

Procedure. Prior to the lesson, enter the following paragraph and save it on the Text Disks for the students to work with:

> This paragraph was entered by your friendly teacher. You see, I, too, am learning to use the computer as a tool for writing. Together, I hope we will learn to write using a computer. We will be doing all kinds of writing on the computer. We will write letters, poetry, stories and even a classroom newspaper. If we work hard, we can all become better writers.

In a large group setting, display the Cursor Movement Chart (see #14 in Appendix) and review "Cursor Movement Keys" with the group. Invite students to come up to the computer and move the cursor to different places in the text (e.g., put the cursor over the first letter in the word friendly; then move the cursor over the last letter in the word newspaper). Repeat the process until the students understand how to move the cursor up, down, left and right. Be sure to explore the use of the RETURN and SPACEBAR keys. Other cursor movement activities include:

1. Make a maze on an overhead transparency and tape over the monitor screen. Have students move the cursor through the maze using the cursor movement keys.

2. Make task cards (see #15 in Appendix) which give directions for students to find "secret" letters, words and punctuation marks coordinating with a previously stored paragraph.

3. Have pairs of students time each other as one student points to a spot in the text and the other tries to move the cursor quickly to that spot.

ACTIVITY #5.2 -- INTRODUCING THE WORD PROCESSOR

Objective. To learn to enter, save and print a short paragraph.

Time Allotment. 30 minute whole group computer session

30 minute computer session working in pairs

Materials.
- Apple II (64K) Computer
- *Writer's Assistant* System Disk (WA-SYS:)
- Text Disk to store students' work (WA-TEXT:)
- Sample paragraph written on a chart
- Editing Command Chart (#16 in Appendix)
- Opening Screenfulls for The Writer's Assistant (#17 in Appendix)

Procedure. Write the paragraph below on a chart. In a whole group setting, tell students that they will be typing (entering) the paragraph into the computer. Read the paragraph together. (You may wish to make up your own sample paragraph.)

> Learning to write on a computer is easy. Just think, no more worn out erasers, no more torn paper and no more writing everything over again. A word processor makes it simple to

> correct writing mistakes. If you have a printer, you can print your work by pressing a key. It may even make writing more fun.

Each pair of students should enter this paragraph into the computer during their scheduled computer time using the WA-SYS: Disk and the WA-TEXT: Disk. Point out the labels on each disk so that the class will be able to tell them apart. The systems disk (WA-SYS:) contains the word processor program. The text disk (WA-TEXT:) is used to store student writing. Putting different colored labels on each will help the class keep them separate.

Explain that the WA-SYS: Disk needs to be "booted" first (put into the drive and the Apple turned on). If you have a single disk drive system, on-screen prompts will help the user insert the WA-TEXT: Disk at the appropriate time. If you have two disk drives, put WA-SYS: in drive #1 (called drive #4 in Pascal) and WA-TEXT: in drive #2 (called drive #5 in Pascal).

Have a volunteer come to the front of the class to boot the WA-SYS: Disk. The opening screen for The Writer's Assistant presents the following four choices (see #17 in Appendix):

1. The Writer's Assistant
   For writing and revising texts
2. The Printing Press
   For printing the text files
3. The File Cabinet
   For organizing files on your disk
4. The Initializer
   For preparing brand-new disks

Select the first option on the menu by pressing the numeral 1. For a single drive Apple system, the screen will prompt the user to remove the WA-SYS: Disk, insert the WA-TEXT: Disk, and then press L. The user will be asked to enter his/her name (initials or first name up to 10 characters). The user is then asked:

```
What text do you want to work on?
```

Explain that each student pair will need to create a new text file by <u>naming</u> the text they are about to enter. First names or initials work well as text file names. Have the volunteer enter his/her initials and press RETURN. The computer will look to see if this name has been used before (if it has, you need to choose a new one) and if it hasn't the screen will show:

```
YOURNAME.TEXT is new. Is that OK?
```

The user should press Y (for Yes) It is not necessary to press RETURN. The disk will spin and a command line will be presented across the top of the screen:

```
> In \ Drop \ Quit \ Help \ ?
```

Show the Editing and Command Chart and explain that In, Drop, Quit and Help are the commands that can be used for writing. To enter text, have the volunteer press I (for In) and then start typing the paragraph. Explain that the whole paragraph can now be entered. A mistake can be erased be using the back-arrow. The computer even moves to a new line when it runs out of room. (Note: If you have an 80-column board, you can type about 80 characters on a line. Older Apples may allow only 40 characters per line. See the User's Guide for instructions on Setting the Environment to adjust line length.) When the paragraph is entered, press CTRL-C to "lock in" the text. Finally, press Q (for Quit) and U (for Update) to save the text on the WA-TEXT: Disk. At this point, if a printer is attached to the computer, the user will be asked:

Print out this text?

Press Y (for Yes) for a quick printout of the paragraph.

ACTIVITY #5.3 -- FRIENDLY LETTERS

Objective. To learn the format of a Friendly Letter and use In and Drop editing commands

Time Allotment. 30 minute whole group computer session
30 minute computer session working in pairs

Materials.
- Apple II (64K) Computer
- Writer's Assistant System Disk (WA-SYS:)
- Text Disk to store students' work (WA-TEXT:)
- Editing Command Chart (#16 in Appendix)
- Friendly Letter Chart (#18 in Appendix)
- Friendly Letter Task Card (#19 in Appendix)
- Previously entered friendly letter

Procedure. Enter the following friendly letter before the lesson and name the text file FRIENDLY.

May 15, 1984

Dear Computer Pal,

My name is Rusty and I am a cat. I have long orange and white fur. My paws and belly are white. I weigh 17 pounds in the winter and 14 pounds in the summer. I shed my fur (and some fat). I was born in a foreign country named Papua New Guinea. My owner tries to spoil me by letting me do my two favorite things, eating and sleeping. I also chase birds. I HATE dogs. I lead a very carefree life on the roof of our house in California, and am glad that I was born to be who I am.

I would love to find out about you. What is your name and what do you look like? Where do you live and what are your favorite free time activities? Who takes care of you? Are you happy? Please write back and tell me about yourself. I am looking forward to your reply.

Your Friend,

Russel

Display the letter on a wall chart. The chart should point out the major components of a "friendly" letter (date, greeting, body, closing and name) as well. In a large group session, explain to the class that when they work in pairs during their computer time, they will need to find this letter on the text disk. Have a volunteer boot-up the WA-SYS: Disk and select option #1. After inserting the WA-TEXT: Disk as requested (for single drive system only), the student next enters his or her name and presses RETURN. The user will be asked:

```
What text do you want
to work on?
```

Press ? to see a menu of available texts on the WA-TEXT: Disk. The file FRIENDLY.TEXT should appear. By pressing the letter in the menu corresponding to this text, the volunteer will load the example letter into The Writer's Assistant.

Once the letter has been loaded, other students can try to make the changes in the text (see #19 in Appendix for suggestions). Selected changes can be listed on a task card and displayed near the computer screen.

Demonstrate how to change characters and words using the Drop and In commands. First press D (for Drop) then press the right arrow or the SPACE key to remove unwanted words. After the characters have been removed from the screen, press CTRL-C. Review the procedures for inserting new characters and words using the In command (see previous lesson). After pressing I (for In), the right side of the line "moves over" to allow the entry of new words. Press CTRL-C to lock in the new text. Have individual volunteers make each of the changes requested with the class and the teacher helping out when needed. When all the changes have been entered, press Q (for Quit) and U (for Update).

Assign the task of entering the requested changes in the FRIENDLY.TEXT file during scheduled computer time. Students may need more than one session to gain facility with the Drop and In commands. Notice that each student pair will be working with the version of the letter which includes all the previous changes made by the users. It may be necessary to make more than one copy of your original letter and reintroduce the original version from time to time since the text may be substantially changed after a few rounds of student editing. If you wish to preserve the original letter, students should choose the W (for Write) option after they Quit and rename the file when requested using their initials (see "Writing Letters" lesson for more information). This way each edited file is saved under a different name instead of being written over the original version.

ACTIVITY #5.4 -- COMPUTER PAL LETTERS

Objective. To write a friendly letter to a "computer pal" in another classroom.

Time Allotment. 30 minute whole group computer session
30 minute computer session for each student pair

Materials.
- Apple II (64K) Computer
- *Writer's Assistant* System Disk (WA-SYS:)
- Text Disk to store students' work (WA-TEXT:)
- Friendly Letter Chart (#18 in Appendix)
- Friendly Letter Task Card (#19 in Appendix)
- Computer Pal Task Card (#20 in Appendix)

Procedure. Early in the school year, contact another "computer-using" teacher who plans to use the computer to support writing activities. Both classrooms will need to have access to the same (or compatible) computer and word processing system to facilitate the exchange of text disks containing student letters. Your local Computer Using Educators (CUE) or other similar professional organization may be helpful in locating other interested teachers in your area.

Once a teacher contact has been made either at your own school, across town or in another state, introduce your students to the idea of exchanging "computer pal" letters on disk. Ask how many students have had a pen pal before. Discuss the kinds of information generally shared with pen pals. As ideas are generated, have a volunteer list on a wall chart the types of information students have exchanged in the past. Try to generate a list of information that might go in a computer pal letter and possible questions which might be asked. Students want to know information about sports played, how computers are used in school, daily schedule, favorite TV shows, places traveled, family members, pets and hobbies.

Review the letter from Activity #5.3, naming the parts of a friendly letter. Explain that in the first computer-pal letter, students might want to include a description of (see #20 in Appendix):

1. Themselves.
2. Their interests.
3. Their families.
4. Also include questions for their Computer Pal.

Finally, review the procedures described in the previous activities -- "booting" the WA-SYS: Disk, selecting option #1, inserting the WA-TEXT: Disk, naming the text (letter) with initials and using In and Drop commands to write their letters. If a printer is available, two print-outs should be made (one to keep and one to send). Place a "mailbox" folder near the computer to store the printed version of the letters in case something happens to the disk.

During scheduled computer time, have each pair of students write a friendly letter to an anonymous computer pal. For novice writers, it may be more efficient to have the students complete a first draft of the letter using pencil and paper. After everyone has entered his/her letters, wrap the disk in heavy cardboard and insert it in an envelope for mailing. When a disk full of letters are returned, students can send their responses to individual computer pals.

--- Insert figure 5.2 about here ---

ACTIVITY #5.5 -- EDITING A BUSINESS LETTER

Objective. To learn the proper format of a business letter and practice using the editing commands.

Time Allotment. 30 minute whole group computer session
30 minute computer session for each student pair

Materials.
- Apple II (64K) Computer
- *Writer's Assistant* System Disk (WA-SYS:)
- Text Disk with previously saved business letter
- Editing Command Chart (#16 in Appendix)
- Business Letter Chart (#21 in Appendix)
- Business Letter Task Card (#22 in Appendix)

Procedure. Prior to the start of the lesson, enter the following letter under the file name BUSINESS.TEXT and save it on the WA-TEXT: Disk using The Writer's Assistant.

Lion Obedience School,
100 Park Avenue,
San Diego, CA 92093
United States of America
February 12, 1985

Whiskas Cat Food Company
14876 Feline Ave.
Sydney, New South Wales
Australia 6447

Dear Sir:

While I was living in Papua New Guinea a few years back, I regularly enjoyed your brand of canned cuisine imported from Australia. I looked forward to many years of pleasant dining until one day my owner packed me in a small cage and flew me to California to live. Ever since my arrival, I have been yearning for a can of your rare and wonderful food, but can't find it anywhere. My owner tries to convince me to accept a substitute "generic brand" cat food, but I continue to hold out for the "original."

Can you help me please? Do you have an importer for your products in this country? Please forward a list of suppliers in my area. Your quick and speedy reply will be much appreciated.

Sincerely,

Russel

In a large group setting, review the format for both friendly and business letters. Discuss the purpose of both types of letters and the circumstances under which each is appropriate.

Friendly Letter - informal sharing of information with a computer pal, family member or friend.

Business Letter - formal communication with a company or individual when making a complaint, requesting information, ordering a product or applying for a job.

Go over the chart (see #21 in Appendix) showing the parts of a business letter (heading, inside address, greeting, body, closing, signature). Review the procedures for booting the WA-SYS: Disk and and inserting the WA-TEXT: Disk. Demonstrate how to locate BUSINESS.TEXT and review the In, Drop and Quit commands. Make a task card listing several editing changes for students to make in BUSINESS.TEXT (see #22 in Appendix).

These are just a few ideas to get started. In addition, you may wish to incorporate grammar lessons by asking students to replace all the singular nouns with plural nouns, put an adjective in front of every noun or rewrite the letter in the third person.

During scheduled computer time, have each pair of students complete the changes indicated on the task card. Remember, when each student pair Quits and Updates, the old version of BUSINESS.TEXT will be replaced by the edited version. The next pair of students will subsequently make changes in the text and destroy the previous version of the letter. If students wish to save their edited business letter, after they press Q (for Quit) they should press W (for Write) and rename their text using their initials. Their letter will be saved under the name: YOURINITIALS.TEXT

--- Insert figure 5.3 about here ---

ACTIVITY #5.6 -- WRITING A BUSINESS LETTER

Objective. To write a business letter to a company requesting information or free materials.

Time Allotment. 30 minute whole group session
30 minute computer session for each computer pair

Materials.
- Apple II (64K) Computer
- Writer's Assistant System Disk (WA-SYS:)
- Text Disk to store students' work (WA-TEXT:)
- Business Letter Chart (#21 in Appendix)
- Request Letter Chart (#23 in Appendix)
- Envelope Chart (#24 in Appendix)
- Addresses of places to write
- Envelopes

Procedure. In a whole group session, review the format and purposes of a business letter. Explain that during their computer time, each pair of students will write a business letter to the address of their choice. You may wish to correlate this activity with a current social studies or science theme. The two books listed below offer a wide range of possibilities for free materials and information which your class can request, usually free of charge:

1. _The Kid's Whole Future Catalog_

   By Paula Taylor

   Random House: New York, 1982.

2. _Free Stuff For Kids_

   Edited by Louise Delagran

   Meadowbrook Press: Deephaven, MN, 1983.

The following guidelines, displayed on a poster, may be useful as a reference for students when they write their business letters (see #23 in Appendix).

Quickly review the procedures for using _The Writer's Assistant_ (WA-SYS: Disk) and the Text Disk (WA-TEXT: Disk). By this time, most students should require little assistance in booting the system and entering their letters. This activity requires access to a printer in order to send the letters to the various businesses. Have each student pair select an item to request, write an appropriate letter during their regular computer time and print two copies of their letter. The students should correctly address the envelope (see #22 in Appendix) using a pen, sign, fold and insert the letter and put it in the "mailbox" folder for the teacher to review and mail.

CHAPTER SIX

POETRY WRITING

by

Barbara Miller-Souviney

Randall Souviney

No writing curriculum would be complete without the inclusion of poetry. Poetry is an ideal medium for writing instruction in that it provides students with an opportunity to express themselves in a rich and condensed format. It focuses on economy of text and demonstrates the potential strength of language in its rhythm. Often, poetry requires a specific structure or pattern which further develops the discipline of the writer.

Many forms of poetry make excellent teaching activities for the elementary grades; the couplet, cinquain, syntu and limerick form all work well. Haiku, a traditional Japanese form of poetry, is a particularly popular form for introducing youngsters to the power of poetic expression since it is highly structured, brief, and does not require forced rhyming. It is a form of poetry which relies on nature as its source of motivation, something common to the experience of us all. The Haiku form often produces moving and impressive verse, an important consideration when trying to encourage young writers.

While some may see a conflict in using a computer to create something as delicate as a poem, we do not. We chose to integrate the teaching of Haiku poetry, facilitated through the use of computer software, as a way to introduce the six-step writing process described in Chapter 3. The structured nature of Haiku makes it relatively easy to create computer generated "writing prompts." We have found that the difficulty some young writers experience with poetic expression can be substantially reduced by using well designed software as a component in the writing process.

As with other styles of writing, the use of the writing process enhances both the experience of writing poetry and the quality of the final product. The response and revision phases of the process are particularly important in Haiku writing due to the subtle nature of the phrasing in this form of poetry.

General Overview. Students engage in the following stages of the writing process to create a Haiku poem:

1. Pre-writing--brainstorming ideas before writing
2. Writing—composing the first draft of text
3. Response--feedback provided by peers on each composition
4. Revision--making corrections and editing final draft
5. Evaluation--review final draft according to objective
6. Post-writing--sharing and display of final composition

Children should work with a partner when composing their Haiku poem on the computer. The objective is to create an original Haiku poem which expresses a single perception about nature, like a season of the year. Each of the 3 lines must adhere to the following syllable count:

Line 1 -- 5 syllables
Line 2 -- 7 syllables
Line 3 -- 5 syllables

---Insert figure 6.1 here ---

Two brown logs burning
Ice gripping the window tight
Cold wind speaking low

After completing the series of activities in Chapter 6, students should be able to:

1. Describe the structure of a Haiku poem.

2. Write a Haiku poem for display in the classroom.

3. Utilize the six writing process steps to create original poetry.

ACTIVITY #6.1 -- HAIKU PRE-WRITING

Objective. To understand the structure of a Haiku poem and develop ideas for writing a Haiku poem.

Time Allotment. 45 minute whole class session

Materials.
- Pictures of nature and seasons(magazine pictures and posters work well)
- Written examples of Haiku poems (#25 in Appendix)
- Butcher paper for recording ideas

Procedure. In a large group session, show pictures of the four seasons. Ask the students to describe each picture by giving as many details as possible. Probe by asking questions about personal activities during each season, how the weather might feel or places of interest to students. As ideas are generated by the class, have one child write words on butcher paper for later use during the clustering and writing activities. Make four columns on butcher paper, "Fall", "Winter", "Spring", "Summer" to help organize the ideas as they are generated.

--- Insert figure 6.2 about here ---

Read several Haiku examples and explain that they are special oriental poems which describe the seasons creatively. A Haiku poem has three lines :

- the first line has five syllables
- the second line has seven syllables
- the third line has five syllables.

Have the children clap out each syllable in the lines to help them to understand the 5, 7, 5 pattern.

Follow-up Activity. As a possible homework assignment, ask the children to choose a season to describe in a Haiku poem. Have them write a list of descriptive words that they might use when writing their poems. They can refer to the butcher paper chart or ask their parents for suggestions. Tell them that during the next day's lesson, they will meet with their computer partners to discuss their ideas and write one or more Haiku poems which will be entered on the computer when it is their turn.

ACTIVITY #6.2 -- CLUSTERING IDEAS FOR HAIKU

Objective. To select descriptive words and cluster ideas in preparation for writing their Haiku poems.

Time Allotment. 10 minute whole group session
30 minutes working in pairs

Materials. - Poster and follow-up materials from previous activity
- Paper and pencils

Procedure. Assemble the children to review the previous day's activity. Remind students about the four seasons, the wall chart containing descriptive words about the four seasons and the sample Haiku poems. Invite the students to read the poem out loud and clap out the syllables. Write the numbers 5, 7, 5 on the board as a reminder. Now have the students meet with their regularly scheduled computer partners to brainstorm ideas about the Haiku that they will be writing on the computer. Encourage them to agree on a season to describe. Then encourage them to cluster their ideas at the top of their papers. Have students compose a Haiku poem together and write it on paper. There will be some quiet hand clapping and finger counting during this time. These poems should be kept for later entry when each pair is scheduled for the computer.

--- Insert figure 6.3 about here ---

ACTIVITY #6.3 -- WRITING HAIKU POEMS

Objective. To enter one or more Haiku poems into the computer.

Time Allotment. 30 minute computer session for each student pair for one or two weeks

Materials.
- Apple II (64K) Computer
- Printer
- Poetry Prompter or The Writer's Assistant
- Haiku Poem Chart
- Examples of Haiku poems

Procedure. Devise a computer-use schedule so that all students have the opportunity to write their Haiku poem using a word processor or the Poetry Tool (InterLearn). Previously written poems can be entered at this time as well. Scheduling children in pairs works well if only one computer is available. Thirty minute blocks are generally adequate to compose at least one Haiku poem (see #25 in Appendix).

Students should use their "clustered" ideas from the previous lesson. Utilizing a word processing system, pairs of students compose one or more Haiku poems on the computer. Prompted writing tools like the Poetry Prompter can provide on screen support for writing by supplying key questions and suggestions. Copies of finished products can be saved on disk and printed for use in the Response and Revision stages of the writing process. Students should print 3 copies so that each student will have a copy and one will be filed.

--- Insert figure 6.4about here ---

ACTIVITY #6.4 -- HAIKU RESPONSE

Objective. To suggest changes and improvements in each other's poems.

Time Allotment. 30 minute whole group session
Two 30 minute sessions working in pairs

Materials.
- Printed Haiku poems from previous activity
- Dictionaries
- Pencils

Procedure. In a whole class session, ask for volunteers to read their poems out loud to the class. Ask the class to think about possible changes and suggestions while listening to the poems. Stress that both positive responses and constructive criticism are welcome. Remember that the purpose of response is to help each other write the best possible Haiku poems. An informal and friendly atmosphere will encourage the children to share their work and use the comments to improve their writing.

Next, demonstrate a few examples of editing on the board: reword an awkward phrase, correct the syllable count in a line, correct spelling and punctuation, select a new title. This is also a good time to stress that response from other writers is a good way to help one another become better authors. Write one of the student's poems on the board (without identifying the author) or make up a poem with several errors. Have the students make comments and identify errors while you make the corrections on the board. Encourage the use of dictionaries during this process. Students should see that their responsibility as editors is to correct errors as well as to give general comments which may help the writer make revisions.

During a second session, form response groups of 4-5 students. Have them work together to make comments about each poem and write corrections on each. These comments will be used by each pair when changes are made in their text on the computer. It may be useful to schedule two response sessions if time allows: one to look only at ideas within the poem which might be changed (descriptive words, title, etc.) and a second sesssion to fix spelling, punctuation and errors in grammar.

--- Insert figure 6.5 about here ---

ACTIVITY #6.5 -- HAIKU REVISION

Objective. To revise the Haiku poems using response group comments.

Time Allotment. 30 minute computer session for each student pair

Materials.
- Apple II (64K) Computer
- Printer
- The Writer's Assistant (WA-SYS:)
- Text Disk with original poems (WA-TEXT:)
- Edited Haiku poems

Procedure. During scheduled times, pairs of students revise their poem(s) using a word processor on the computer. Explain that each pair should load their original Haiku poem from the Text Disk and make any changes they wish based on the comments from the response group. Leave the folder of edited poems on the computer stand so students can refer to them as required. It should be noted that each author must make the final decision about changes in their writing, but should not feel obligated to make all the changes suggested. The final copy should be shared in some fashion and, if appropriate, evaluated by the teacher or peers. Again, students should print 3 copies, one for the teacher and one for each student.

--- Insert figure 6.6 about here ---

ACTIVITY #6.6 -- EVALUATING HAIKU POEMS

Objective. To assess the quality of each Haiku poem.

Time Allotment. 30 minute small group session

Materials. - Printouts of edited Haiku poems

Procedure. Assessment often has been primarily the responsibility of the teacher. It is useful, however, for students to to take some responsibility for evaluating poems as well. One way to do this is by forming a committee (similar to the classroom newspaper "Editorial Board" described in Activity #8.8). The responsibility of the committee is to evaluate each poem. The committee should discuss criteria for evaluation such as correct form and syllabication, appropriate title and content and the effective use of words and details. Divide the students into several groups and distribute Haiku poems written by other members of the class. This way, everyone will have an opportunity to serve on an evaluation committee.

--- Insert figure 6.7 about here ---

ACTIVITY #6.7 -- SHARING HAIKU POEMS

Objective. To display final versions of Haiku poems for public viewing

Time Allotment. 45 minute session working in pairs

Materials.
- Printouts of Haiku poems
- Paints, crayons, art paper

Procedure. It is important for authors to know that their writing will be displayed for people to read. There are several ways this can be accomplished. Try displaying the poems on a bulletin board, in school hallways, in the library or school office. Utilizing a variety of art materials, students can illustrate their poems by depicting in picture form what they have attempted to capture in words. After pictures are complete, the poems can be cut out and attached. When the time comes to replace the poems with other writing, a class book can be created for the class library. Here is an example of one way to display students' work, called a Poet-Tree.

POET-TREE

--- Insert figure 6.8 about here ---

CHAPTER SEVEN

EXPOSITORY WRITING

by

Barbara Miller-Souviney

Randall Souviney

Nearly everyone at some time needs to write instructions for an event or activity. Lesson plans are an example of expository writing. Repair manuals, catalog descriptions and recipes are other examples.

Because this form of writing is fairly straight forward and easy to evaluate, it should be included in any elementary writing program. The computer can be used effectively to assist students to learn to write clear, concise expository compositions. The four activities in this chapter each assign students to complete an expository writing task. In the first activity, students select among several phrases at each stage in the process of making a sandwich. The computer provides all the text and organization while the student determines the direction of the plot. In the following three software supported activities, the student gradually takes over more of the responsibility for paragraph organization and text entry (see Chapters 2 and 3). For each activity, however, the writer produces a complete first draft of an expository composition as one component in the writing process.

__General__ __Overview__. Expository is a type of writing in which the author attempts to describe an event or procedure to be carried out by the reader. Generally, an expository composition is structured as follows:

1. An introduction which gives an overview of the task or procedure to be described.

2. A main paragraph which describes the steps needed to complete the specified activity.

3. A conclusion which tells how the writer feels upon completing the activity or a reflection on the process involved.

The following set of four activities makes use of interactive writing software called the Expository Tool (InterLearn).

1. "Sandwich Making"
2. "Our School Day"
3. "How A Computer Works"
4. "How To"

Each of these writing prompts can be used for one cycle of student computer use (about one week). The output files can also be saved on Text Disks and edited using a word processor during a second cycle if desired. This two week cycle (one week to write and one to edit) is a common pattern. Response groups can be formed between the writing and editing cycles.

In each of the four activities, students produce a piece of expository writing with varying amounts of support from the computer. The programs are designed to be used in sequence so that as students gain experience, they take on more responsibility for producing text. By participating in the production of good models of expository text, children learn to write on their own. Each of these four expository writing activities can be used as a component in the writing process using the following steps:

1. Once all printouts of an activity are complete, place them in a folder.
2. Read a sample of the stories to the class. Invite students to read their own stories if time allows.
3. Form response groups to make suggestions and corrections on the printed copies.
4. As the editing cycle begins, encourage students to use their edited printout when making changes in text files.
5. Make a new printout and display the final versions on bulletin boards or place them into a class book.

After completing the series of activities in Chapter 7, students should be able to:

1. Write an original expository composition incorporating a title, introduction, body and conclusion.

2. Use a word processor to edit and print an expository composition as one component in the writing process.

ACTIVITY #7.1 -- SANDWICH MAKING

Objective. To create an expository composition with maximum support provided by the computer.

Time Allotment. 45 minute large group session
30 minute computer session per student pair

Materials.
- Apple II (64K) Computer
- Printer
- "Sandwich Making" program
- Expository Poster (#26 in Appendix)

Procedure. In a large group session, introduce the program "Sandwich Making" to the students. Discuss the purpose of expository writing and the structure of a good expository text. Explain that the author describes how something is constructed, or the steps in a procedure. As an example, demonstrate how the computer program helps the user to write the directions for making a sandwich. Point out that the students will need to make selections that the computer program gives them for their sandwich ingredients.

Read the computer program's directions out loud as you show them on the screen and write one story together. Ask for volunteers from the class to give choices for the ingredients. The children will probably want to go on and on, writing the longest set of instructions possible, but at some point choose to add no more ingredients. This choice ends the story. Print out the story and have a student read it out loud. Point out the three parts of the story--introduction, body and conclusion--and stress the importance of all three parts in an expository composition (see #26 in Appendix).

Expository Composition

1. Title - Name for your composition.
2. By - Type your name.
3. Introductory Paragraph - Main idea,
   tell why you are writing about it.
4. Body - Give details of your main ideas.
5. Conclusion - Tell how you feel when you finish the
   activity or when you will do it again.

Allow the children to use "Sandwich Making" during their computer time that week. Students should save their stories on Text Disks and print out three copies. Use these printouts during response groups and the editing session the following week.

ACTIVITY #7.2 -- OUR SCHOOL DAY

Objective. To write the sequence of events describing a typical school day

Time Allotment. 45 minute whole group session
30 minute computer session per student pair

Materials.
- Apple II (64K) Computer
- Printer
- "Our School Day" program
- Expository Poster (#26 in Appendix)

Procedure. Explain to the students that they will be writing an expository composition about their typical school-day schedules. The program will give them the structure of the story by providing the introduction, body and conclusion along with much of the text. The students will need to fill in words or finish sentences to make their expository story complete.

--- Insert figure 7.1 about here ---

Go through the activity with the students, reading the text presented aloud. Take suggestions from the group to complete each segment of the story, discussing other possible ways to fill in words or complete sentences. Finally, print out the class story and have a student read it. Ask students to listen for the introduction, body and conclusion and to describe the contents of each part. Review the poster describing the parts of an expository composition (#26 in Appendix) and display it near the computer for student reference. Use the same procedure as in Activity #7.1 for this two week cycle. This activity is likely to take two weeks.

ACTIVITY #7.3 -- HOW A COMPUTER WORKS

Objective. To write a composition about the successful operation of a computer.

Time Allotment. 45 minute whole group session
30 minute computer session per student pair

Materials.
- Apple II (64K) Computer
- Printer
- "How A Computer Works" program
- Expository Poster (#26 in Appendix)

Procedure. In a whole group session, ask your students to describe how they operate the classroom computer. After some discussion, ask the students if this task could be an an example of expository writing. Have a student describe out loud the steps required for operating a computer. See if the class can identify the three components of an expository composition.

Introduce the program, "How A Computer Works." Again pairs of students will write a story with the help of the computer, but the amount of support provided by the computer will be less than in the previous two activities. The computer will provide the introduction and conclusion, but the students must actually write the steps required to operate a computer successfully. This second paragraph (the body) will have topic sentences to help students organize their ideas; however, the students must fill in the actual steps and details.

--- Insert figure 7.2 about here ---

Try the program with the whole group, collaboratively creating a class version of how to run a computer. Depending on your class, the students may feel comfortable enough to talk through possibilities. Be sure to emphasize that their composition may be read by someone who has never used a computer before. It is important to think through the sequence of instructions carefully before they write. Sharing completed stories with a group of non-computer users may be a real motivation for the students to write clearly and to show off their expertise. A younger or less experienced class at your school may be just the place to display the products. Follow the same cycle of writing, response groups and editing as in the previous activities.

ACTIVITY #7.4 -- HOW TO

Objective. To write an expository story about how to do some job or activity with very little computer support.

Time Allotment. 45 minute whole group session
30 minute computer session per student pair

Materials.
- Apple II (64K) Computer
- Printer
- "How To" program
- Expository Poster (#26 in Appendix)

Procedure. In a whole group session, ask the children to define the word "advice." Once the group has established a definition, explain that in this expository writing activity, the computer will only give advice or suggestions to the writers as they compose an original expository composition on their own topic.

--- Insert figure 7.3 about here ---

Brainstorm topics to write about or see suggestions contained within the program. Demonstrate the "How To" program and point out the type of advice given. All of the text for the entire story must be organized and entered by the authors. Point out that they should use the same three part composition structure used in the previous three activities. As students complete stories during their computer time, three printouts should be made for use during response groups and the editing cycle. All the expository stories can be bound into a class book or displayed on school bulletin boards. Some may be appropriate for inclusion in a class newspaper.

CHAPTER EIGHT

CLASSROOM NEWSPAPERS AND NETWORKS

by

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This sequence of activities serves as a plan for introducing skills specific to newspaper writing and for applying those skills to the production of a classroom newspaper using a word processing program. Developing classroom newspapers can provide a year-long opportunity for students to engage in the writing process.

Students invest more effort in their writing when they know it will be read by others. News networks between nearby schools or established networks such as the Computer Chronicles Newswire Network (InterLearn) can be used to expand the audience for which students are writing. Writing to students in different locations helps children to understand the need for vivid description and explicit detail when describing events they take for granted. While student work can be transmitted electronically between computers, it is also possible to create networks by sharing information stored on disks which can be exchanged or sent through the mail. The means of transmission is not as important as the form of the information when it is received. Ideally, the information received is in a form that can be easily revised and printed in the same format as locally produced stories. Reviewing articles written by students from other schools and serving on "editorial boards" to prepare articles for inclusion in a local newspaper often helps reluctant students expand their writing interests.

General Overview. Writing for a newspaper involves a range of writing skills. Students can employ descriptive, expository and other forms of writing when preparing articles for publication. Student journalists are required to provide factual coverage of information and sequential descriptions of events in their reporting. A good newspaper article generally includes facts about each of the "5 W's:"

Who -- include the names of those involved
What -- describe what happened
Where -- where did the event take place
When -- when did it happen
Why -- what were the reasons for the event

Teaching writing in this way gives students a purpose for writing and provides a "real" audience. Professional news offices today use word processing technology and computer networks to produce daily newspapers. Similarly, students can take advantage of computer technology to produce a classroom newspaper.

Working on a classroom newspaper is an activity that helps students to understand writing as a process. The activities are arranged to help students in each of the stages of writing.

Steps in the Writing Process

Pre-Writing - Discuss current events, review newspaper articles written by others, conduct brainstorming sessions.

Writing - Students write their first draft of an article using a prompted writing environment, or word processor.

Response - Students share what they have written with their peers, discuss strengths and weaknesses, and suggest ideas for improvements.

Revision - Students edit their work making corrections and producing a final draft.

Evaluation - Final drafts are reviewed in small groups of 4-6 students who assess the content and form of the story making final decision about which articles to publish or revise and publish in their newspaper.

Post-Writing - Newspapers are assembled, produced and distributed to class members, to others in the school and to student reporters from other classrooms whose stories where carried.

Many of the following activities are based on software called The Computer Chronicles (InterLearn). This Interactive Tool provides on screen prompting for writing articles for various sections of a classroom newspaper. It helps students to isolate the type of story they are going to write and provides specific information or guidance on writing the type of article selected. QUILL planners can be written to provide similar guidance within the QUILL system. Any word processor can be used for these activities, but it might be necessary to provide some additional guidance for pre-writing and writing in the form of task cards.

The activities in this chapter assume access to an Apple II (64K) computer with a disk drive and a printer. After completing the series of activities in Chapter 8, students should be able to:

1. Understand the different types of articles that are found in different sections of a newspaper.

2. Write a news article including the key elements -- Who, What, Where, When and Why.

3. Participate in an Editorial Board to select and edit articles, and assist with the production of a classroom newspaper.

--- Insert figure 8.1 about here ---

ACTIVITY #8.1 -- PARTS OF A NEWSPAPER

Objective. To introduce the parts of a newspaper and components of an effective article.

Time Allotment. 30 minute small group session

Materials.
- Multiple copies of same edition of newspaper
- Scissors
- Paste
- Markers or crayons
- Construction paper

Procedure. In groups of 4-5, have the students list as many sections of a newspaper as they can. After a couple minutes, have one student from each group read sections on their list and compile a class list on the board. Give each group copies of the same newspaper, scissors, paste, markers and construction paper. The task for each group is to find at least one article from each of the listed sections, cut it out and paste it on a piece of construction paper with corresponding heading. Any additional sections discovered should be included as well. Allow about 10 minutes for this part of the activity. When the class is finished, discuss any additional sections discovered and add them to the class list on the board. Have a person from each group read an article selected by the group. Each group must present an article from a different. section. If time allows, discuss the articles briefly by reviewing Who, What, Why, When and Where questions. You can use the article posters as the beginning of a current events scrap book.

--- Insert figure 8.2 about here ---

ACTIVITY #8.2 -- CURRENT EVENT REPORTING

Objective. To learn to select articles of interest from a newspaper, summarize the article and report orally to classmates.

Time Allotment. 10-15 minutes daily

Materials.
- Network sign
- Microphone
- World map

Procedure. Ask the students if they watch news broadcasts. Have them name anchor persons they watch. Discuss what these people do. Explain that students will take turns being anchor persons for a classroom television station. Set up a weekly rotating schedule so each student has an opportunity to report once a week (4-5 students per day). Ask the students to select articles of interest from their home newspapers. It may be necessary to bring in a newspaper each morning since some students may not have access to one. Explain that they will need to summarize the information in the articles, paying attention to Who, What, Why, When and Where.

The news is presented from a "newsroom desk" which has the necessary props (microphone, network sign, typewriter, a world map). Students should be encouraged to watch news programs and imitate the formats observed. Students often find it fun to use "stage names" as well. The news should be "broadcast" at about the same time each day. These regular broadcasts may also be used to incorporate student prepared commercials (...and now a word from our sponsor) and other broadcast activities such as book reviews, opinions and editorials. An occasional audio or video recording may also add motivation later in the year. The news clippings from which students prepare their summaries should be dated and collected in a news scrapbook for later use at a writing center.

--- Insert figure 8.3 about here ---

ACTIVITY #8.3 -- NEWSPAPER SCRAPBOOK CENTER

Objective. To have students read, summarize and comment on current events and locate specified areas on a map.

Time Allotment. 10 minute whole group introductory session
25 minute session for each student pair for one week

Materials.
- Current event scrapbook
- World maps (8x10 sheets and wall size)
- Paper and pencil (work processor or typewriter may be substituted)
- News Center Chart (#27 in Appendix)

Procedure. In a brief whole group session early in the week, introduce the Newspaper Scrapbook Center. Pairs of students should be scheduled to work at the center independently. Write the following instructions on a chart and display it at the Center:

--- Insert miniature of Appendix #27 about here ---

This activity may be repeated periodically, or special interest scrapbooks may be compiled (Olympics, Presidential elections) for added motivation.

ACTIVITY #8.4 -- COMPUTER NEWS NETWORKS

Objective. To introduce the idea of "news networks" in the production of a classroom newspaper.

Time Allotment. 30 minute whole group session

Materials.
- Newspaper with AP or UPI stories
- *Computer Chronicles Prompter*. (InterLearn) or *Quill Planner*. or any word processor
- U.S. and world maps
- Classroom newspapers from other sites
- Disk for mailing articles to other classrooms
- Press cards

Procedure. In a whole group session, discuss the purpose of newswires. Display the front page of the local newspaper. Ask the students to describe the parts (headlines, table of contents, pictures, captions, masthead) and why each is important. Discuss who writes the articles in the newspaper and where it is printed. Point out a story written about a distant country (show location on the map). Ask the students who wrote the article. Discuss how the news travels from the place it occurs to the place it is printed. Some students may know that computers are involved in the transmission while others may suggest that reporters fly back and forth or phone in stories. Discuss the role of the computer in speeding up communication by using phone lines to transmit print.

Show a copy of a classroom newspaper from another school. Discuss the articles and who wrote them. Ask about how stories from different places were collected. Explain that by using compatible computers, students from the class next door, or from around the world, can send a disk full of stories which can be read on the classroom computer screen, edited using a word processor and printed. Explain that the class will be evaluating stories from other classrooms as well as locally written articles, for inclusion in their own edition of the newspaper.

Demonstrate the Computer Chronicles Prompter. (or teacher prepared task cards and any word processor) and how it can will help students write their own articles on the computer. These will also be sent to the other schools for possible inclusion in their local newspapers. Pass out the student press cards and discuss possible uses (eg., getting into the dugout for a real-time interview with the little league coach).

--- Insert figure 8.4 about here ---

ACTIVITY #8.5 -- PREPARING TO WRITE NEWS ARTICLES

Objective. To have students report the factual details of an event they have experienced.

Time Allotment. 15 minute whole group discussion
30 minute individual writing session

Materials.
- A shared experience such as field trip, school or class event, film, activity, game, etc.
- photos from experience if possible

Procedure. As a pre-writing activity, have students discuss an event in which the whole class participated. Discuss who participated, the purpose of the event, where it was, when it was, what happened, etc. Write the facts on the board as they are presented. Discuss the "voice" of a newspaper (non-participant observing and recording the activity). Have a volunteer try to describe the event in the "reporters voice." For example:

> Ms. Brown's class went on a field trip. The students traveled by bus to the museum and several of the students....

Have each student (or pair of students) write an outline of an article which addresses Ms. Brown's field trip or a real experience each has had.

ACTIVITY #8.6 -- WRITING NEWS ARTICLES

Objective. To produce a newspaper article using a computer and appropriate software.

Time Allotment. 30 minute computer session for each student pair

Materials.
- Apple II (64K) computer
- Printer
- Computer Chronicles Prompter or Quill Planner (or word processor with task cards)
- Computer Chronicles News Network (CCNN) Charts (#28 and #29 in Appendix)

Procedure. Previous Pre-Writing activities have prepared students to write news articles on topics and events. Schedule students into the Computer Center in pairs to write articles using posted and/or screen displayed directions (Computer Chronicles Prompter). If the Computer Chronicles software is not available, other options include using The Writer's Assistant, the Quill Planner, the Bank Street Writer, Apple Works, or another word processor together with teacher made task cards posted near the Center. The number of writing and editing sessions will vary according to student skills and experience. Depending of the amount of computer time available, some teachers have found it easier to schedule if students do pre-writing and the first draft of their articles off the computer. If time does not allow every student-pair to compose their articles at the computer, previously written articles can be quickly entered during computer time or after school to allow easy editing and reformatting.

--- Insert miniature of Appendix #28 about here ---

ACTIVITY #8.7 -- RESPONSE TO NEWS ARTICLES

Objective. To introduce the idea response groups for providing feedback to authors on how to improve their articles.

Time Allotment. 30 minute whole group session
30 minute session working in pairs

Materials.
- Printed copies of news articles from Activity #8.6
- Editing Codes Chart (#30 in Appendix)
- Editing Checklist (#31 in Appendix)
- Dictionaries
- Pencils, pens

Procedure. Response groups can be an effective way to give feedback to students in order to improve their articles. Ask the class questions like the following:

1. What information should be included in a good news article? (5 W's)
2. How should it be organized? (Introduction, body, conclusion, reporter's "voice", etc.)

3. What rules of grammar should be followed in writing?
(punctuation, tense, noun/verb agreement, etc.)

Summarize the students' responses to these questions on the board. Explain that when writing down ideas generated during brainstorming sessions, an author is often unable to accomplish all of these goals. Generally, we need to edit our writing. Discuss the types of skills an editor must have. Ask why authors might want to ask someone else to edit their work rather than editing it themselves. Explain that the class will be working in pairs to make suggestions for improving the content, organization, grammar and punctuation of each others' articles. Emphassize that final decisions regarding changes rest with the author. Suggestions can be given orally, or partners can write suggestions directly on printed copies of the articles. It is important to model positive editing attitudes using a sample piece of work that the whole class can see. The class may want to use standard codes for indicating corrections (eg., P means new paragraph, sp means spelling error).

--- Insert miniature of Appendix #30 about here ---

Divide the class into pairs. Give each student pair a printed copy of the article written by one of the pair during Activity #8.6. If the students wrote in pairs, there should be just enough articles for each editing pair. If individuals wrote articles, each editing pair should work on both articles.

Have students review the standards they developed for good newspaper writing, rules of punctuation, grammar and spelling. Remind students that the author of the article will have final say regarding changes and corrections. Editing pairs should then read the article(s) and note the corrections and changes agreed upon. The team should discuss its suggestions for changes and be prepared to support its suggested technical corrections and organizational and content changes.

ACTIVITY #8.8 -- REVISING NEWS ARTICLES

Objective. To edit newspaper articles using a word processor.

Time Allotment. 30 minute computer session working in pairs

Materials.
- Printed copies of news articles from Activity #8.6
- Editing Codes Chart (#30 in Appendix)
- Editing Checklist (#31 in Appendix)
- Editing Computer Chronicles Chart (#32 in Appendix)
- Dictionaries
- Pencils, pens

Procedure. The original author(s) should review changes and corrections offered during the Response session and determine which to incorporate into their final draft. Additional changes may be made at this time as well. It may be advisable for students to submit their completed work to the teacher for a final review to encourage further editing if necessary.

Once authors are satisfied with the form and content of their work, students should enter changes using a word processor during regularly scheduled computer time. It is desirable to share completed final drafts with the entire class as a way of validating the importance of the editorial effort.

ACTIVITY #8.9 -- EDITORIAL BOARD MEETINGS

Objective. To select and prepare articles for inclusion in the local edition of the Computer Chronicles.

Time Allotment. 30 minute Board meetings daily for about two weeks (meetings may need to occur during lunch or after school.)

Materials.
- Printouts of student articles
- Printouts of articles from other classrooms or schools

Procedure. This activity represents the Evaluation stage of the writing process. The goal of this activity is for students to create an evaluation framework for determining the quality of student writing to be included in the classroom newspaper. The role of the teacher should be one of facilitator, not decision maker.

First, select 6-8 students of varying ability levels to serve on the Editorial Board (all students should serve sometime during the school year). During the first meeting, discuss the need to provide the writer with helpful feedback on their work. The board should establish standards they wish to set for accepting or rejecting articles for publication. It is important to allow students to arrive at their own set of criteria.

Suggestions might include:

1. Interesting topic
2. Makes sense
3. Well written with few editorial errors
4. Covers the topic (5 W's)
5. Addresses important topic.

List suggested criteria as they are offered. To minimize subjective decisions, members of the Editorial Board should understand that they will be responsible for giving the reason for the rejection of an article. This is to help the writers improve their future articles. The Board should read all the submitted articles. They should determine which section of the newspaper each article belongs and if some sections have too many or too few articles. It may be necessary to request additional articles for some sections. If there are any hand written articles, these will need to be entered on disk and printed.

Distribute the articles from one section of the newspaper to the Board members so that each member has at least one article to read. Ask members to read their article silently, making mental notes of their comments. Have the board members take turns reading the articles aloud to the rest of the board and presenting their evaluations. Encourage students to discuss their reasons for why an article is "good" or "poor." Arrive at agreement for or against inclusion by consensus or by voting. Finally, the Board must separate the articles into "accept," "reject" and "maybe" folders, and make final selections for the newspaper. Remember, a rejection requires explanation to the author. Repeat this process for each section of the newspaper. Final editing of the selected articles should be completed by members of the Editorial Board using the word processor.

Alternative to the Editorial Board. As an alternative method for selecting articles, you may wish to set up an Editor's Desk Center. There, students working in pairs can read and evaluate articles (both local and off the newswire) and complete an evaluation poll. After the entire class has completed the poll, the highest rated articles are selected for inclusion in the class newspaper. Any student can volunteer to edit articles which require further work.

--- Insert figure 8.5 about here ---

ACTIVITY #8.10 -- ASSEMBLING THE CLASSROOM NEWSPAPER

Objective. To assemble and distribute copies of the Classroom Computer Chronicles.

Time Allotment. Three 45-60 minute small group sessions

Materials.
- Final copy of the selected articles
- Artwork
- Header pages
- Rubber cement
- Correction fluid

Procedure. This activity represents the post-writing stage of the writing process. Articles selected by the Editorial Board must be formatted into 40-column widths using the word processor and printed. Art work needs to be prepared either on the computer if graphics software is available or drawn by hand. Cut-out and arrange articles to fill each sheet of header paper which has preprinted section titles (these can be hand lettered as well if CCNN supplied Headers are not available). Once the page layout has been completed, the articles can be "pasted up" using rubber cement which allows easy repositioning of articles if necessary. Hand lettered headlines, captions and art work can be added at this time. The final paste up should be examined carefully by the Board and then xeroxed. Next, use correction fluid to reduce the cut-lines which generally appear around each article, headline and graphic. Finally, using the clean master, xerox multiple copies, assemble and distribute.

Follow-Up Activities. The classroom newspaper can be used as reading material for other lessons. For example, have students locate and classify different types of articles such as Sports, Local and World News, Cultural Events, etc. Use the articles as a source of spelling words, examples of proper grammatical usage and vocabulary words. Assess reading comprehension by assigning students to develop 3-5 questions about specific articles for the rest of the class to answer. Have students locate particularly well written sentences and paragraphs and read them aloud. Have your class identify articles which would benefit from the inclusion of a picture and have them draw them. Share copies of the newspaper with another class or school and encourage students from there to submit articles for future publications. Send copies to the principal, the superintendent, the mayor...

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SELECTED SOFTWARE AND WRITING RESOURCE BOOKS

Apple Presents Apple (Apple Computer). A simple tutorial introduction to the Apple //e and //c which describes the computer the keyboard and functions.

Apple Works (Apple Computer). Very easy to use software which intergrates word processing, date-base and spreadsheet applications.

Apple Writer (Apple Computer). A professional quality word processor. It can be used by older children for activities in this book which call for a word processor.

Bank Street Writer (Broderbound). A word processing system developed specifically for young users. It is designed for school use and includes tutorials and teaching applications.

Bank Street Speller (Borderbund). A spelling verification program that is designed to use with the Bank Street Writer.

CompuPoem (K-12 Micro-Media). A prompted writing environment for writing poetry which provides directions and advice for pre-writing experiences and composing of poems.

Computer Chronicles (InterLearn). An interactive writing environment to help students write different types of newspaper articles.

Computer Chronicles Newswire Network (InterLearn). Includes the Computer Chronicles software for writing newspaper articles and a subscription to a "newswire" in which students become reporters and editors. Reporters share their stories with other students on the network. Local editors make decisions about which newswire stories will be carried in their classroom edition of the Computer Chronicles.

Expository Tool (InterLearn). An interactive writing environment which includes four activities to help students learn how to write expository compositions. The activities are arranged to provide more support at the beginning and less support as the students acquire skill.

Interactive Text Interpreter (ITI) (InterLearn). A special purpose authoring system which can be used to create a range of interactive lessons, adventures, writing activities, questionaires and forms.

Interactive Writing Tools (InterLearn). A set of ITI programs which provide dynamic support for the writing process. Students can be given the opportunity to select among options, read instructions, follow examples, or just recieve encouragement. These simplified writing environments are used to create a first draft of text that can be later revised and edited with The Writer's Assistant.

Kids on Keys (Spinnaker Software). A program that helps students gain familiarity with the keyboard. It can be used as a typing or keyboard familiarity exercise for one or more students.

The Letter Writer (InterLearn). A set of interactive texts which can be used to write specific types of friendly and business letters.

MasterType (Scarborough Systems). An arcade game format for learning keyboard skills.

Narrative Writing Tool (InterLearn). Provides dynamic support for learning to write narrative compositions. The disk contains four programs which vary the level of the support provided.

Poetry Prompter (InterLearn). An interactive writing environment that helps students write various forms of poetry including Haiku, Limericks, Diamante and Name poems.

QUILL (D.C. Heath). A set of programs which motivate students to employ a process approach to writing which encourages pre-writing, revision and editing. The system includes The Writer's Assistant word processor, the Planner, Library and Mailbag. Requires two disk drives and a printer.

QUILL Mailbag (D.C. Heath). The component of the QUILL system which serves as an electronic mail system for the classroom. Emphasizing communication as an important goal of writing, the Mailbag makes it easy for students to send letters, memos or invitations to anyone in the class.

QUILL Planners (D.C. Heath). The component of the QUILL system which helps writers generate and organize ideas for writing by posing teacher entered questions which suggest a plan for getting started. The text created when using a planner is printed and used as a guide for writing. When composing on the computer, the text created using a planner must be reentered since there is no provision for saving it on disk.

Sensible Speller (Sensible Software). A spelling verification program. It contains over 80,000 words and is compatible with The Writer's Assistant.

Storymakers (Bolt, Berenak, and Newman). Interactive reading activities in which the students are asked to make selections among options. The created story is one of many possible versions. It is not possible to save the student's work on disk for editing.

Storytree (Scholastic). Allows students to decide which way a story will unfold by selecting different story branches. Students can use a built in word processor to write and edit storytrees but there is no way to store or edit the story that the person creates when using a storytree.

Typing Tutor III (Simon and Schuster). A program that helps students gain familiarity with the keyboard by doing typing exercises. It provides detailed graphic analysis of performance.

The Writer's Assistant (InterLearn). A word processing system designed for novice, intermediate and advanced use. When the level of experience is set of novice, it functions as an entry level word processor for elementary and secondary students. With the experience level set to intermediate or expert, it enables the user access to increasingly powerful functions to reformat, transfer and delete text.

Visicalc (Visicorp). A spreadsheet program that allows complex calculations to be carried our on columns and rows of numbers. Applications include bookkeeping, accounting and planning.

Word Star (MicroPro International Corp.). A professional word processing system whth a wide range of features.

Free Stuff For Kids edited by Louise Delagran. Deephaven, MN: Meadowrook Press, 1983.

A super listing of addresses to which children can write for free information and items of interest.

Handbook for Planning an Effective Writing Program, Kindergarten Through Grade Twelve by Handbook Writing Committee. California State Department of Education, Sacramento, CA: Department of Education, 1982 (Computer Addendum 1985).

The California State Framework for developing a writing program following the stages of the writing process. Provides a standard for assessing existing programs and a tool for designing new ones.

If You're Trying to Teach Kids How to Write, You've Gotta Have This Book! by Marjorie Frank. Nashville: Incentive Publications, 1979.

A must have" book for any grade level. The book deals not only with the "how" of writing, but also the problems associated with traditional writing programs in schools. Written in a personal, easy to read style, the author covers topics from "My Kids Say They Can't Think of Anything To Write" to "How Can I Get Them to Write on their Own?". Many motivating, practical ready to use ideas and activities are included. A discussion of the writing process is also included.

In Your Own Words, A Beginner's Guide to Writing by Sylvia Cassedy. Garden City, New York: Doubleday and Company, 1979.

An approach to creative prose and poetry writing which emphasizes that writing starts with sensual awareness and perceptions. Contains excellent suggestions for where a teacher should begin and where to go from there.

The Kid's Whole Future Catalog by Paula Taylor. New York: Random House, 1982.

A whole book full of places to write for free and inexpensive brochures, pamphlets, books and other interesting items.

Pathways to Imagination: Language Arts Learning Centers and Activities for Grades K-7 by Angela S. Reeke and James L. Laffey. Glenview, Illinois: Scott, Foresman and Company, 1979.

A book of language arts learning centers that can be utilized in the classroom. Writing activities are divided into catagories (eg., Creative Writing, Functional Writing, Library Skills and Poetry. Each type of writing has a variety of ready to use activites with helpful diagrams of the centers.

Practical Guide to Computers in Education by Peter Coburn, Peter Kelman, Nancy Roberts, Thomas Snyder, Daniel Watt and Cheryl Weiner. Menlo Park, CA: Addison-Wesley Publishing Company, 1983.

An excellent overview of computers and computing for the educator with little prior experience.

Rose, Where Did You Get That Red? Teaching Great Poetry to Children by Kenneth Koch. New York: Vintage Books, Random House, 1973.

A handbook, anthology, and instructor's guide written by a poet who understands how to teach children in a way that moves them beyond "roses are red, violets are blue. . . "

Teaching Writing in K-8 Classrooms: The Time Has Come by Tiedt, Bruemmer, Lane, Stelwagon, Watanabe and Williams. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1983.

Written by Fellows of the South Bay Writing Project which explains different types of compositon and provides step by step activities for instruction. It is based on a "sequential holistic model that centers language arts instruction on composition. " Useful for teaching different kinds of writing such as narrative and expository writing.

Also includes methods for evaluating student work.

Teaching Writing K-8 by Jack Hailey. The Regents of the University of California (available through Professional Development and Applied Reseach Center, Department of Education, University of California, Berkeley), 1978.

A comprehensive overview of the writing process which deals with assessing students work (holistic assessment) along with the teaching of writing. A discussion of the writing process is included along with ideas for "writing across the curriculum". Finally, the "Reviewing the Masters" section takes a look at the research end of writing and summarizes findings of some of the more noted researchers in the area of writing.

Wishes, Lies and Dreams, Teaching Children to Write Poetry by Kenneth Koch. New York: Chelsea House Book, Harper & Row Publishers, 1970.

Philosophical discussion of writing poetry and a guide to teaching children to write poetry. Discussion based on the author's own experience.

Write Here by Joanne Richards and Marianne Standley. Nashville: Incentive Publications, 1984.

A series of writing activities including suggested motivation, story starters, materials, directions and adaptations for cross-curricular applications. Suitable for grades 3-6.

Write Up A Storm (Creative Writing Ideas and Activities for the Middle Grades by Linda Polon and Aileen Cantwell. Glenview, Illinois: Scott, Foresman and Company, 1979.

Over 100 classroom tested worksheets and activities that stimulate kids to use their imagination to write. The activites come from the children's own experiences and interests. Topics include"Tongue Twister Time", Be an Abler Fabler" and "Produce Your own Game Show." Activities can be easily adapted for computer writing.

The Writing Corner by Arnold Cheyney. Glenview, Illinois: Scott, Foresman and Company, 1979.

Full of information regarding the history of writing, creating the atmosphere for productive writing, as well as functional descriptions of different forms of writing such as poetry, short stories, reports and essays. Included in this easy to read book is a section on "Creating the Classroom Newspaper" as well as many practical "classroom ready" ideas. A section on "The Teacher Writes. . . for Profit" may arouse interest among teacher writers.

The Young Writer's Handbook, A Practical Guide for the Beginner Who is Serious About Writing, by Susan and Stephen Tchudi. New York: Scribners, 1984.

A well constructed guide for young writers which offers ways to approach journal writing, fiction, plays, poems, news writing, editing and publishing. An excellent resource for teachers and children.

GLOSSARY OF COMPUTER AND WRITING TERMS

CENTRAL PROCESSING UNIT (CPU): A complex computer chip which control the processing of information inside the computer — the computer's "brain."

COMPUTER AIDED INSTRUCTION: A prevailing use of microcomputers in which students are presented with a range of exercises in a predetermined order. Correct answers often generate positive reinforcement displays and incorrect ones may be followed with the same or a similar example. Based on the pattern of user responses, some corrective instruction may be employed and the level of difficulty may be automatically adjusted.

DISK DRIVE: A mass storage device which records information on floppy disks.

DYNAMIC SUPPORT: The process of systematically reducing the amount of assistance provided to novices learning a task.

EVALUATION: The stage in the writing process in which peers and experts review of the final product according to the original intent of the compostion.

FLOPPY DISK: A flexible plastic disk which is commonly used to store text and other information for future use.

FUNCTIONAL LEARNING ENVIRONMENT: Learning situations which are organized for meaningful purposes rather than evaluative purposes. Learning environments in language arts which emphasize the communicative functions of language.

HOLISTIC EDUCATIONAL PRACTICE (THE WHOLE TASK): The organization of instruction such that students participate in whole activities with the support of others until they are capable of carrying out the entire task on their own.

INTERACTIVE CAPABILITIES OF COMPUTERS: Created by software which enables users to share the initiative for modifying the learning situation while learning in a computer supported environment.

INTERACTIVE WRITING TOOL: Writing software which exploits the interactive capabilities of computers.

KEYBOARD: A set of keys with symbols positioned like those of a typewriter used to input information into a computer.

MONITOR: A television device used by the computer to communicate with the user.

POST-WRITING: The final stage in the writing process where compositions are shared, displayed or published.

PRE-WRITING: The process of brainstorming and organizing ideas prior to writing.

PRINTER: A device used to make a "hard" copy of text or graphics on paper.

RANDOM ACCESS MEMORY (RAM): A computer memory chip which is used to temporarily store information in the computer.

READ ONLY MEMORY (ROM): A computer memory chip which contains information (eg., BASIC language) which is used frequently by the computer.

RESPONSE: The stage in the writing process where writers get feedback from peers and experts on their compositions.

REVISION: Making corrections and other changes to create the final draft of a composition prior to evaluation..

SOFTWARE: Computer programs which cause a computer to carry out specified tasks.

TEXT DISK: A disk used exclusively for storing text files.

TEXT FILE: A computer file containing words or other symbols.

WRITING: The act of composing the first draft of a story, poem, letter or article.

WRITING PROCESS: The view that the composing process is composed of six, interrelated steps -- Pre-writing, Writing, Response, Revision, Evaluation and Post-writing.

WORD PROCESSOR: A particular type of software that enables a computer to function somewhat like a typewriter -- the user can enter, edit and print text.

APPENDIX I
BLACK LINE MASTERS

1. Writing With a Pencil
2. Writing With a Word Processor
3. Typing Center Tasks
4. Typing Center Instructions
5. Rotation Schedule
6. Center Schedule
7. Apple Ability
8. When In Doubt - Help Me!
9. Get Me Out of Here
10. Naming It
11. Naming Codes
12. Saving It
13. Finding It
14. Cursor Movement Chart
15. Cursor Movement Tasks
16. Editing Command Chart
17. Opening Screenfulls for The Writer's Assistant
18. Friendly Letter
19. Friendly Letter Task Card
20. Computer Pal Task Card
21. Business Letter
22. Business Letter Task Card
23. Request Letter Chart
24. Addressing an Envelope
25. Haiku Poetry
26. Expository Composition
27. News Center
28. Computer Chronicles News Network
29. CCNN Directions
30. Editing Codes
31. Editing Checklist
32. Editing Computer Chronicles

1

WRITING WITH A PENCIL

To Write:

1. Move the pencil to the place you wish to write.

2. PUT THE LEAD POINT DOWN.

3. Write the words

4. When finished, LIFT THE PENCIL.

To Erase:

1. Move the pencil to the spot you wish to erase.

2. PUT THE ERASER END DOWN.

3. Move the eraser to remove the words.

4. When finished, LIFT THE PENCIL.

WRITING WITH A WORD PROCESSOR

To Write:

1. Move the cursor to the place where you want to write.
2. PRESS I FOR IN.
3. TYPE the words.
4. When finished, PRESS CTRL-C.

To Erase:

1. Move the cursor to the spot you wish to erase.
2. PRESS D for DROP.
3. Move the cursor over the words to be removed.
4. When finished, PRESS CTRL-C.

3

TYPING CENTER TASKS

a. type your name
b. type the names of your family
c. type the names of your classmates
d. type your address
e. type your telephone number
f. type the alphabet in lower case
g. type the alphabet in upper case
h. type numbers in sequence, 1 to 50
i. type a poem
j. type a riddle or a joke
k. type your spelling words
l. type your vocabulary list

1

4

TYPING CENTER

At this center you will practice your keyboarding skills.

- Turn the typewriter "on"
- Feed the paper into the machine
- Set your margins
- Choose an activity from the taskcard. Complete the activity
- Choose as many activities as you have time to do
- When the period is over:

Clean up the center
Put your work on display
Turn the typewriter "off"

ROTATION SCHEDULE

	10:35 11:00	11:00 11:25	11:25 11:50	11:50 12:15
Red	Group	Seatwork	Centers	Writing
Yellow	Group	Writing	Seatwork	Centers
Green	Seatwork	Centers	Group	Writing
Blue	Centers	Writing	Group	Seatwork

CENTER SCHEDULE

	1 Computer	2 Library	3 Language	4 Listening
Julie		⊗		
Bud	⊗			
Barb			⊗	
Randy	⊗			
Kim				⊗
Steve		⊗		
Bea				⊗
Bob			⊗	

4 charts in different colors will accomodate 32 students in 4 groups of 8

⊗ indicates thumbtacks which are used to mark center assignment. Tacks are moved one space to the right each day. Partners may be changed from week to week

APPLE ABILITY

Getting Started

- Select the disk with which you will be working. Carefully remove it from its jacket.
- Open the "garage door" of the disk drive and insert the disk, label up and "under your thumb. Close the "garage door"
- Turn on the MONITOR
- Turn on the COMPUTER
- Follow the directions on the screen
- When you have finished, remove the disk, replace it in its jacket, store it in the box and turn the MONITOR and COMPUTER off

WHEN IN DOUBT

(Help Me! Help Me!)

If the computer is not doing as you think it should, try one of these before you call a computer tutor or a teacher.

- Is it plugged in?
- Is it turned on?
- Is the monitor on?
- Did you push RETURN?
- Did you push CONTROL-C?
- Did you read the screen for further directions?

If you can answer, "yes," to all of these questions and you still can't get results...

CALL
COMPUTER
TUTOR

GET ME OUT OF HERE

If you need to "get out" of a program or back to the beginning, try these in order.

- Push **ESC**
- Push **Q**
- Push **CONTROL & RESET**
- Push **PR#6**

NO LUCK?

CALL

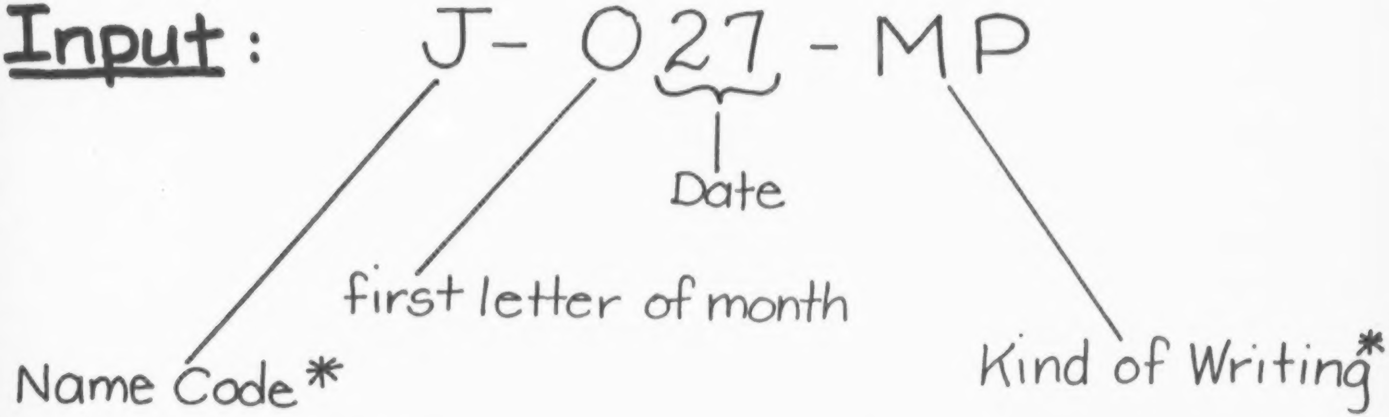
COMPUTER TUTOR

Warning! DO NOT turn the computer off

NAMING IT

How to label a piece of writing before saving it:

Prompt: TEXT NAME ▨



Input: J- 027 -MP

Date

first letter of month

Name Code*

Kind of Writing*

RETURN

*Naming Code List

NAMING CODES

1	Karen
2	Tim
3	Michelle
4	Bud
5	Margaret
6	Randy
7	Barbara
8	Bea
9	Luis
A	Bobbie
B	Marty
C	Christie
D	Cyndy
E	Gloria
F	Steve
G	Marcia
H	Jim
I	Michael
J	Megan
K	Kim
L	Chelsea
M	Linda
N	Rahn
O	Cheri
P	Will
Q	Norma
R	Isabel
S	Kathy
T	
U	
V	
W	
X	
Y	
Z	

Kind of Writing

MP- Monster Poem
SS - Silly Sentences
AA - Animal Antics
SW - Star Wars
CP- Computer Pals
EW- Expository Writing

SAVING IT

How to save what you have written on a

WA-TEXT: disk

- After you have named your text, remove the Interactive Text Tool disk from the disk drive
- Place WA-TEXT: disk in disk drive
- Push RETURN ... the drive will "spin" and the light will go on
- When the light goes out, remove the WA-TEXT: disk
- You may write again by replacing the Interactive Text Tool

FINDING IT

How to find something you have saved on a TEXT disk

- Boot WA-SYS:disk, select option #1, push RETURN

- Follow screen directions:
  You will be directed to remove WA-SYS:disk, insert WA-TEXT; then push L

- If you do not remember the code for your text, push SHIFT ? RETURN and select the text from the list provided. Push the label letter next to your text and RETURN

- If you do remember the code, enter it and push RETURN

PRESTO, CHANGO!

There's *your* text

CURSOR MOVEMENT CHART[14]

SPACE (moving right)

RETURN (moving to next line)

→ (moving right)

← (moving left)

↑ (moving up)

↓ (moving down)

O (moving up)

L (moving down)

CURSOR MOVEMENT TASKS

a. Move the cursor over the first letter in the text, then to the last letter in the text

b. Move the cursor up 5 lines, then down 3 lines, then 4 words to the right.

c. Move the cursor to the first noun in the text, then to the last adjective in the text.

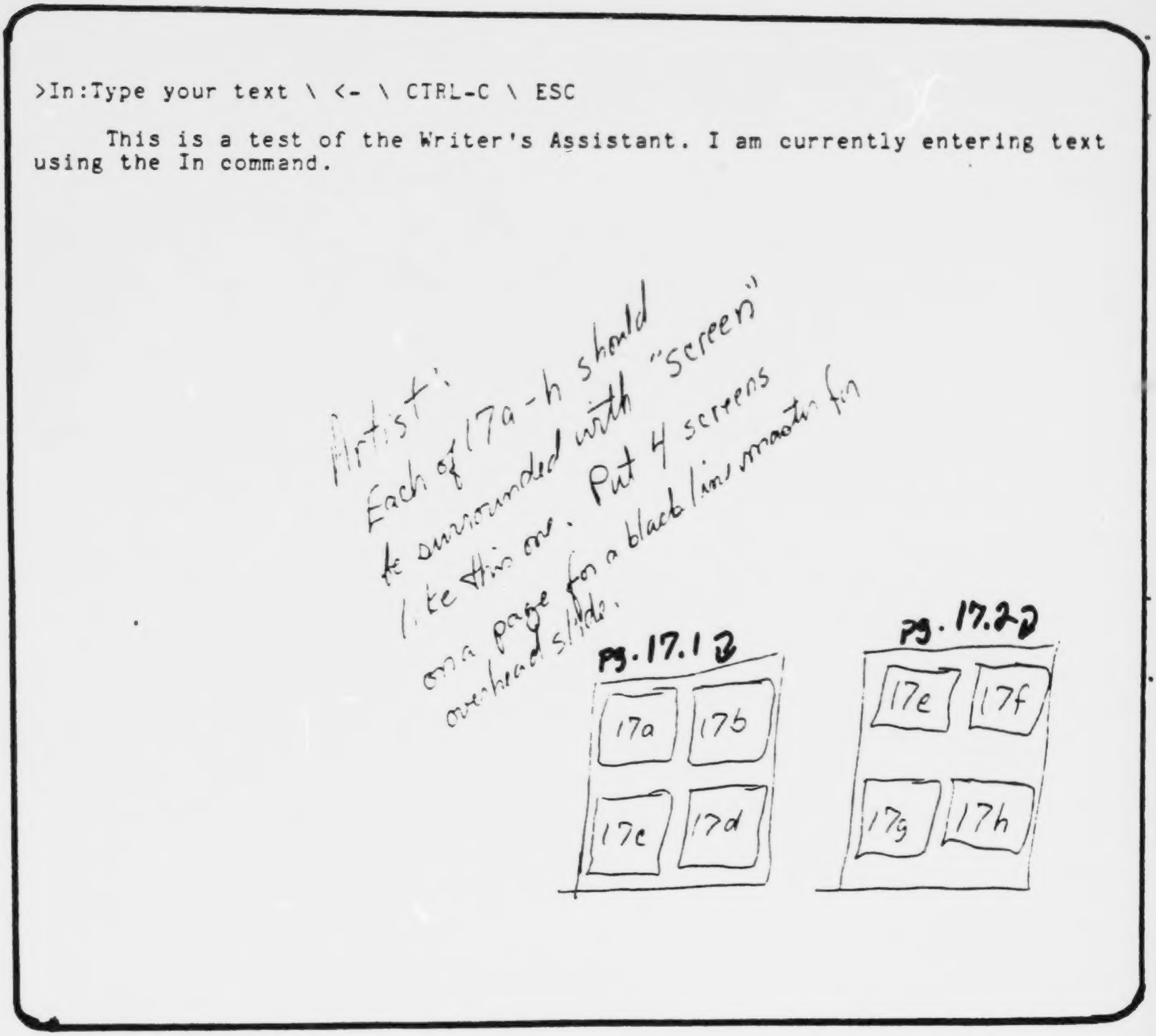
d. Move the cursor as quickly as possible to the last period in the text.

16

EDITING
COMMAND CHART

I - to type **I**n text
D - to **D**rop letters and words
Q - to **Q**uit after writing
U - to **U**pdate text on the disk
CONTROL-C - to "freeze" or lock in text after using **I**n or **D**rop

17.1+17.2
See fig +
8 pages



```
>In:Type your text \ <- \ CTRL-C \ ESC

     This is a test of the Writer's Assistant. I am currently entering text
using the In command.
```

Artist:
Each of 17a-h should be surrounded with "screen" like this one. Put 4 screens on a page for a black line master for overhead slide.

pg. 17.1a
17a
17b
17c
17d
pg. 17.2a
17e
17f
17g
17h

```
****************************************

               Welcome to

     the Writer's Assistant System.

****************************************
```

```
          Choose (1, 2, 3, or 4)
            then push  RETURN.


->1) The Writer's Assistant
        For writing and revising texts

  2) The Printing Press
        For printing the text files

  3) The File Cabinet
        For organizing files on your disk

  4) The Initializer
        For preparing brand-new disks


         (c) 1984 InterLearn Inc
 Box 342, Cardiff by the Sea, CA  92007
       Portions (c) 1978 Regents
   University of California, San Diego
```

```
To return to the List of tools, push  L.
   ------

***************************************
*                                     *
*   To write or edit text:            *
*                                     *
*   - First put in your               *
*     Writer's Assistant Text Disk.   *
*                                     *
*   - Then push  L                    *
*                                     *
***************************************
```

```
>The Writer's Assistant


Hi, who are you?









                (c) 1984
InterLearn Inc, Box 342 Cardiff CA 92007
           Portions (c) 1978
The Regents of University of California,
               San Diego
```

17d

```
>The Writer's Assistant




What text do you want
 to work on?



   Push  ?  to see the available texts.
```

```
>W:In \ Drop \ Quit \ Help \  ?
===============================================================================
```

17f

```
>Quit

Choose one of the following:

U  to save TEST.TEXT
     and leave

S  to save TEST.TEXT
     and return to your text

E  to exit without saving your text

R  to return to your text without saving

W  to save your text under a new name

A  to save TEST.TEXT
     and work on another text
```

```
>Quit

Print a draft of this text?
```

18
~~17~~

FRIENDLY LETTER

May 15, 1984 (date)

(greeting) Dear Computer Pal:

(body) My name is Rusty and I am a cat. I have long orange and white fur. My paws and belly are white. I weigh 17 pounds in the winter and 14 pounds in the summer. I shed my fur (and some fat). I was born in a foreign country named Papua New Guinea. My owner tries to spoil me by letting me do my two favorite things, eating and sleeping. I also chase birds. I HATE dogs. I lead a very carefree life on the roof of our house in California and am glad that I was born to be who I am.

I would love to find out about you. What is your name and what do you look like? Where do you live and what are your favorite free time activities? Who takes care of you? Are you happy? Please write back and tell me about yourself. I am looking forward to your reply.

(closing) Your Friend,

Russel

(signature) Russel

19 ~~16~~

FRIENDLY LETTER
TASK CARD

Make these changes in FRIENDLY.TEXT

a. Change the year in the date to the year you were born.

b. Change the name in the greeting to the name of your best friend.

c. Change one of the places mentioned in the letter to one you have visited

d. Add a question to the ending of the letter.

e. Write a new closing.

f. Change the name to your name.

20
~~19~~

COMPUTER PAL
TASK CARD

When writing a Computer Pal Letter:

a. Describe yourself (color of hair, eyes, skin, etc.)
b. Describe your interests (school, hobbies, etc.)
c. Describe your family (include pets)
d. Ask questions about your computer pal.

21
~~20~~

BUSINESS LETTER

Lion Obedience School, (heading)
100 Park Avenue,
San Diego, CA 92093
USA

(inside address)
Whiskas Cat Food Company
14876 Feline Ave.
Sydney, New South Wales
Australia 6447

(greeting). Dear Sir:

(body)

While I was living in Papua New Guinea a few years back, I regularly enjoyed your brand of canned cuisine imported from Australia. I looked forward to many years of pleasant dining until one day my owner packed me in a small cage and flew me to California to live. Ever since my arrival I have been yearning for a can of your rare and wonderful food but can't find it anywhere. My owner tries to convince me to accept a substitute "generic brand" cat food but I continue to hold out for the "original."

Can you help me please? Do you have an importer for your products in this country? Please forward a list of suppliers in my area. Your quick and speedy reply will be much appreciated.

(closing) Sincerely,

Russel

(signature) Russel

22
~~21~~

BUSINESS LETTER
TASK CARD

Make the following changes in BUSINESS.TEXT:

a. Change the date in the heading to the current date.

b. Change the inside address to our school's address.

c. Change the name in the greeting to your teacher's.

d. Replace "quick" and "speedy" in the last line to two antonyms for those words.

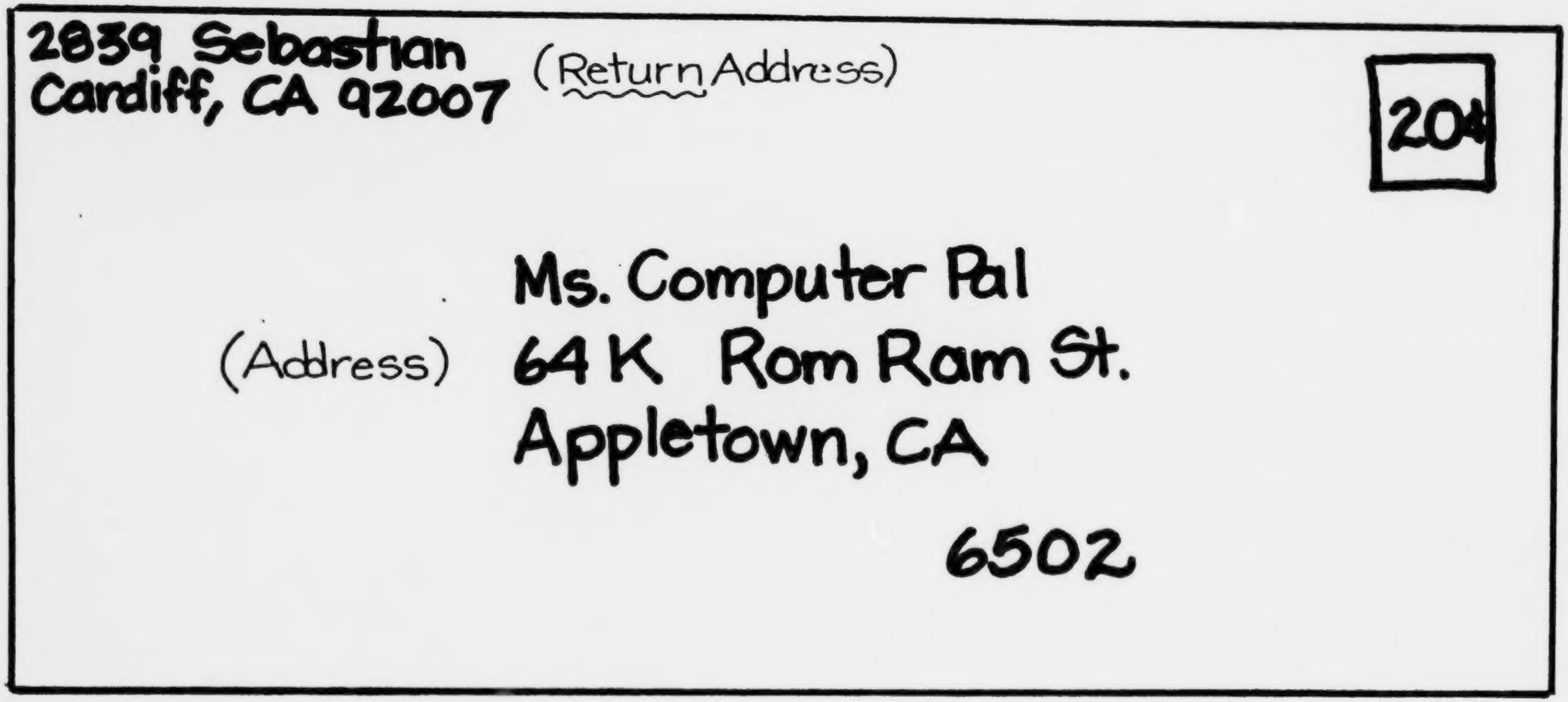
e. Insert a new closing.

f. Change the signature to your name.

REQUEST LETTER CHART

- State your reasons for wanting certain items offered by the company, (I am studying about pets and would like your free booklet on Pet Care).
- Include the address where items should be sent if it is different than the address in the heading of the letter.
- Be sure to thank the company ahead of time for sending the materials.

ADDRESSING AN ENVELOPE


(Return Address)
20
(Address)

2839 Sebastian
Cardiff, CA 92007

Ms. Computer Pal
64 K Rom Ram St.
Appletown, CA
6502

25
~~24~~

HAIKU POETRY

A Haiku expresses a thought, a feeling, or an observation about nature.

It has no rhyme. It has 3 lines.

Line 1 -- 5 syllables
Line 2 -- 7 syllables
Line 3 -- 5 syllables

For example:

The Sun is so bright
Shining on the earth all day
Till the day is done.

EXPOSITORY COMPOSITION

1. TITLE – Name for your composition

2. BY – Type your name

3. INTRODUCTORY PARAGRAPH – "Main Idea"
Tell why you are writing about it

4. BODY – Give details of your "Main Idea" Give step by step instructions of how to do it in order

5. CONCLUSION – Tell how you feel when you finish the activity or when you will do it again

NEWS CENTER

- Select an article which interests you from the scrapbook.

- Read the article very carefully.

- Write a summary without looking at it again. Remember

  WHO ? WHERE ?
  WHAT? WHEN ?
  WHY ?

  If you can't remember, look again !

- Write a comment or opinion about the article. What do you think ?

- Find the location of the event on the wall map. Label it on the small map.

- Staple the map to your summary. Put your completed paper in the folder for others to read.

- Read what others have written. Read the scrapbook.

COMPUTER CHRONICLES NEWS NETWORK

Garrison Bureau

Welcome Cub Reporters!

This week is get acquainted week. These directions will help you to use the Computer Chronicles Prompter disk and let you practice storing text for future editing. Enjoy the exploration and experimentation.

The Field Editor
CCNN

29
~~28~~

CCNN

-DIRECTIONS-

- Boot CC file (Disk labeled Computer Chronicles© Interlearn Inc.)

- Follow instructions on screen

- Select the section for which you wish to write. Enter your text

- Five minutes before the end of the period, STOP writing

- SAVE what you have written on the disk labeled "WA-TEXT: for saving stories"

- PRINT 2 copies, make sure your names are on the printout. File them in the folders

EDITING CODES

∧	(caret) means something has been left out
Ø	slash through a capital letter means make it lower case
$\underline{\underline{\underline{r}}}$	three lines under a lower case letter means make it a capital
ⓢⓟ	circled sp above a word means the word is misspelled
¶	double lined P means make a new paragraph
*	(asterik) means to look at the note at the bottom of the page

Series E MacMillan English

31
~~30~~

EDITING CHECKLIST

1. Does your topic sentence tell what the paragraph is about?

2. Do the rest of the sentences give details about the main idea?

3. Does each sentence express a complete idea?

4. Did you indent at the beginning of each paragraph?

5. Did you capitalize all proper nouns and the first word of each sentence?

6. Does each sentence end with the proper punctuation mark?

7. Did you use proper punctuation in each sentence?

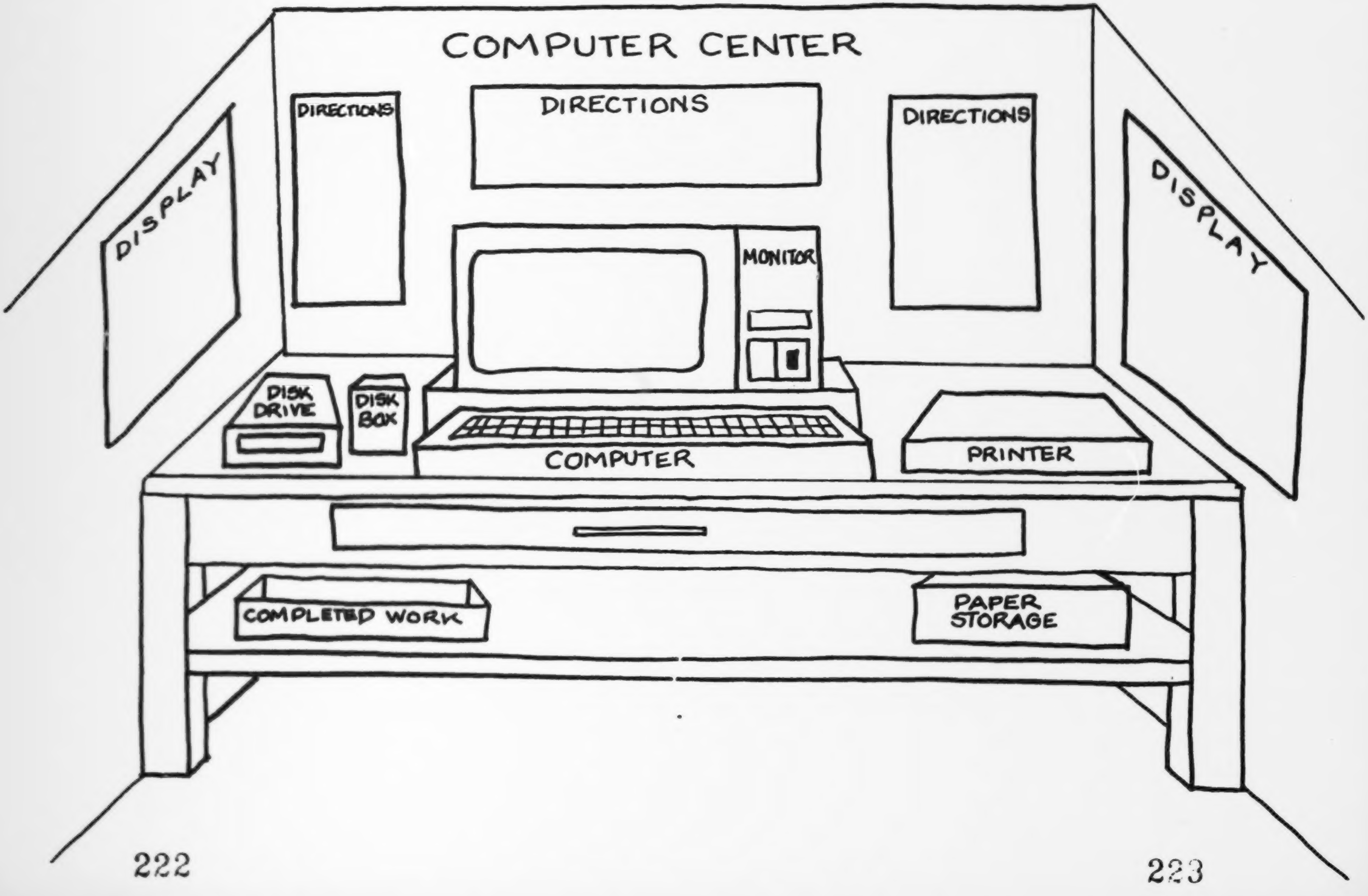
8. Did you check spelling?

Series E MacMillan English

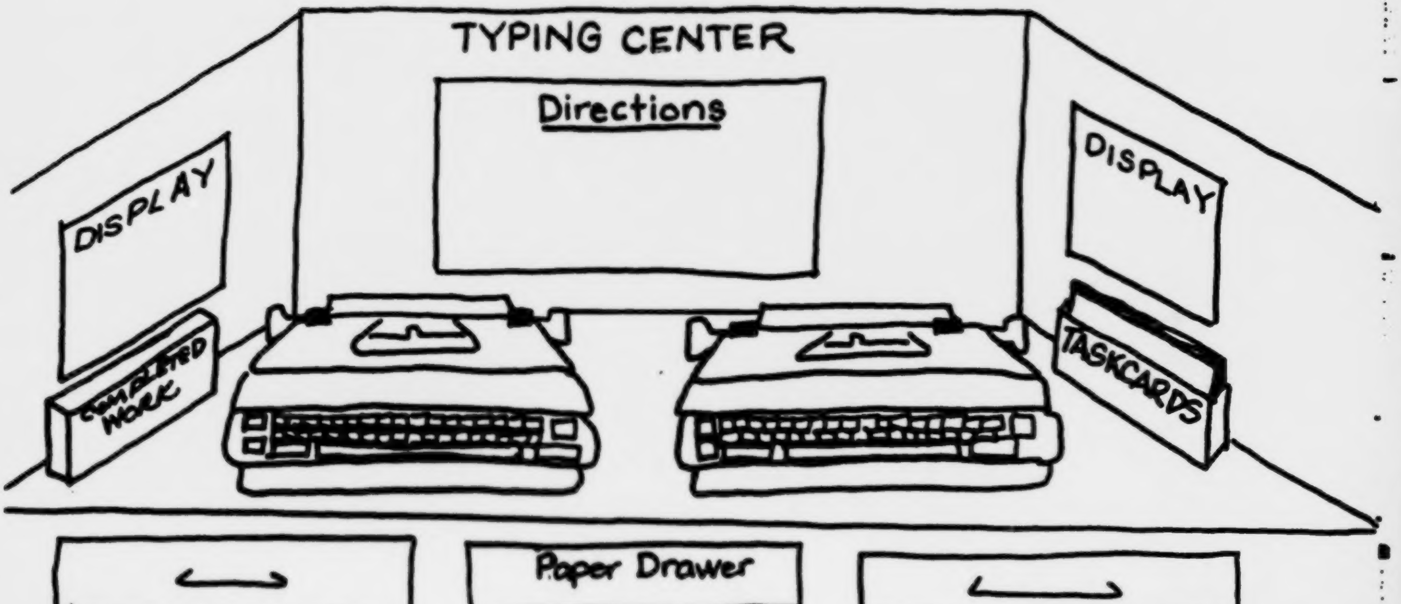
EDITING
COMPUTER CHRONICLES

To finish or edit an article:

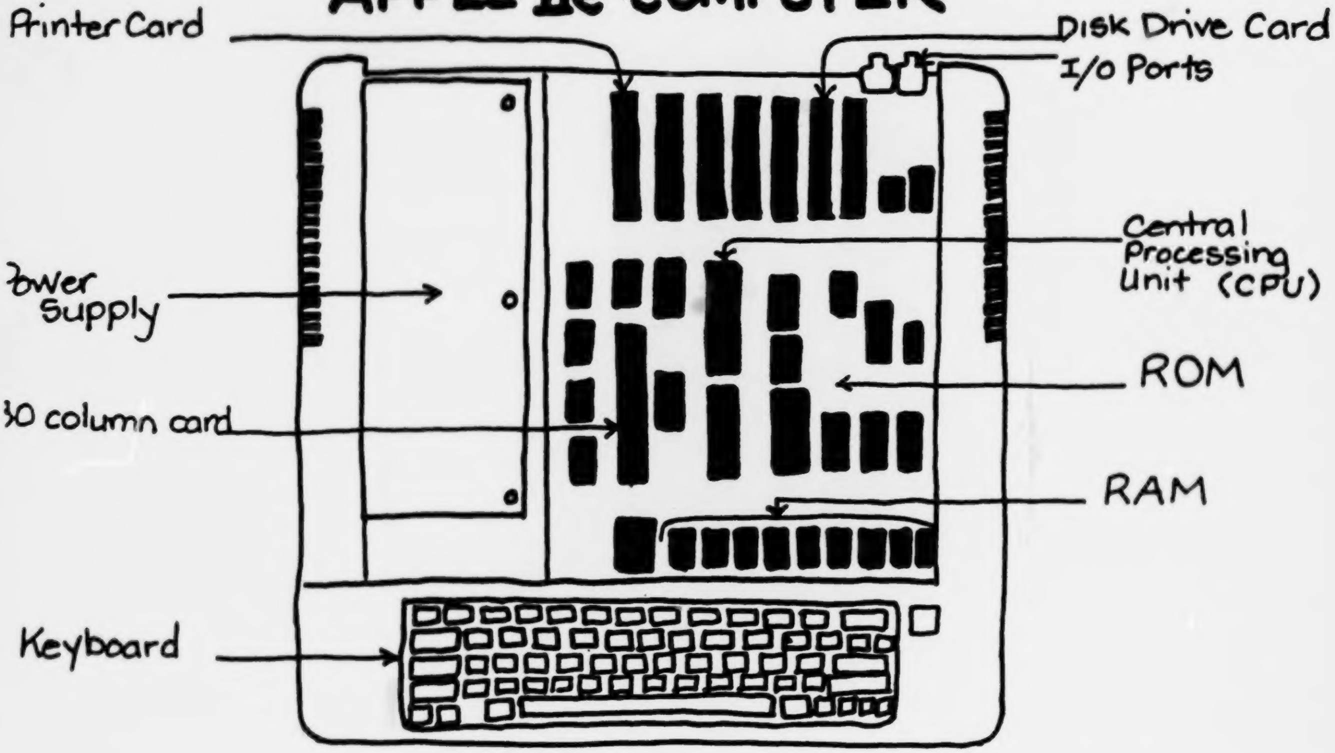
- Boot the WA-SYS disk
- Select option 1
- Insert TEXT disk on which you previously stored article
- Follow screen directions and those for FINDING IT
- Edit text using I and D commands as before
- Be careful to save time to QUIT, UPDATE and print 2 copies for the file folders

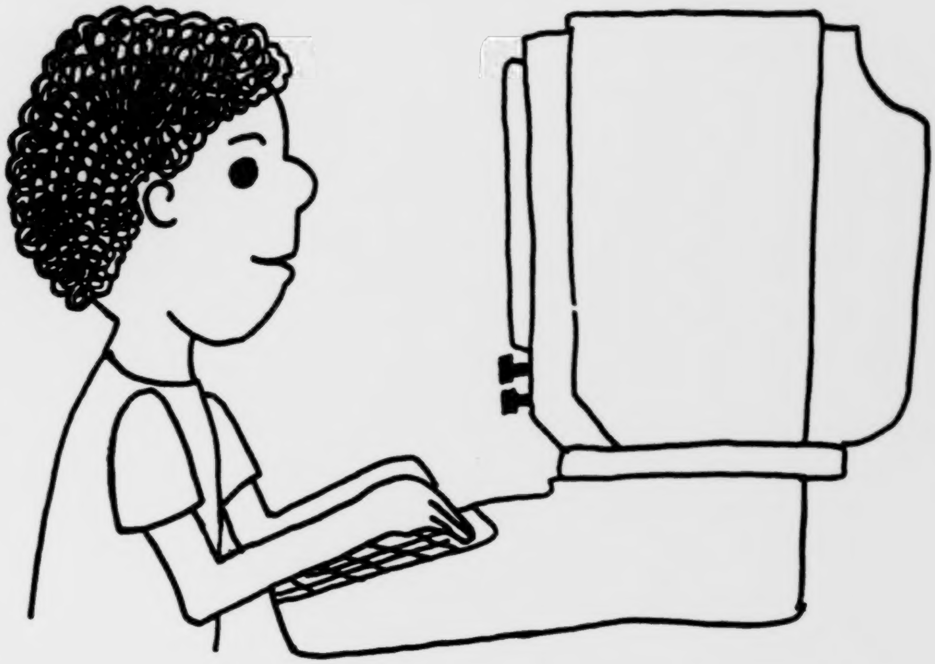

COMPUTER CENTER
DIRECTIONS
DIRECTIONS
DIRECTIONS
DISPLAY
DISPLAY
MONITOR
DISK DRIVE
DISK BOX
COMPUTER
PRINTER
COMPLETED WORK
PAPER STORAGE

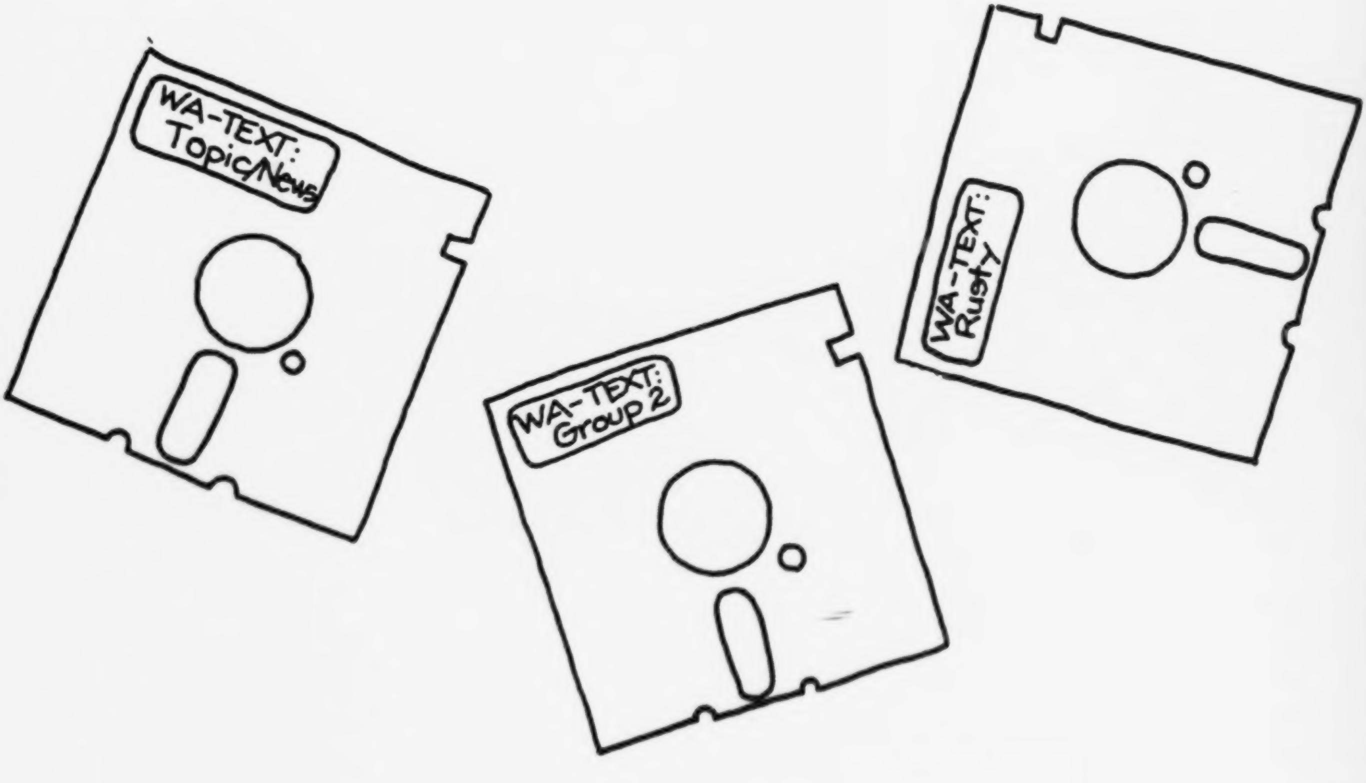
TUNUNAK NEWS


TYPING CENTER
Directions
DISPLAY
DISPLAY
COMPLETED WORK
TASKCARDS
Paper Drawer

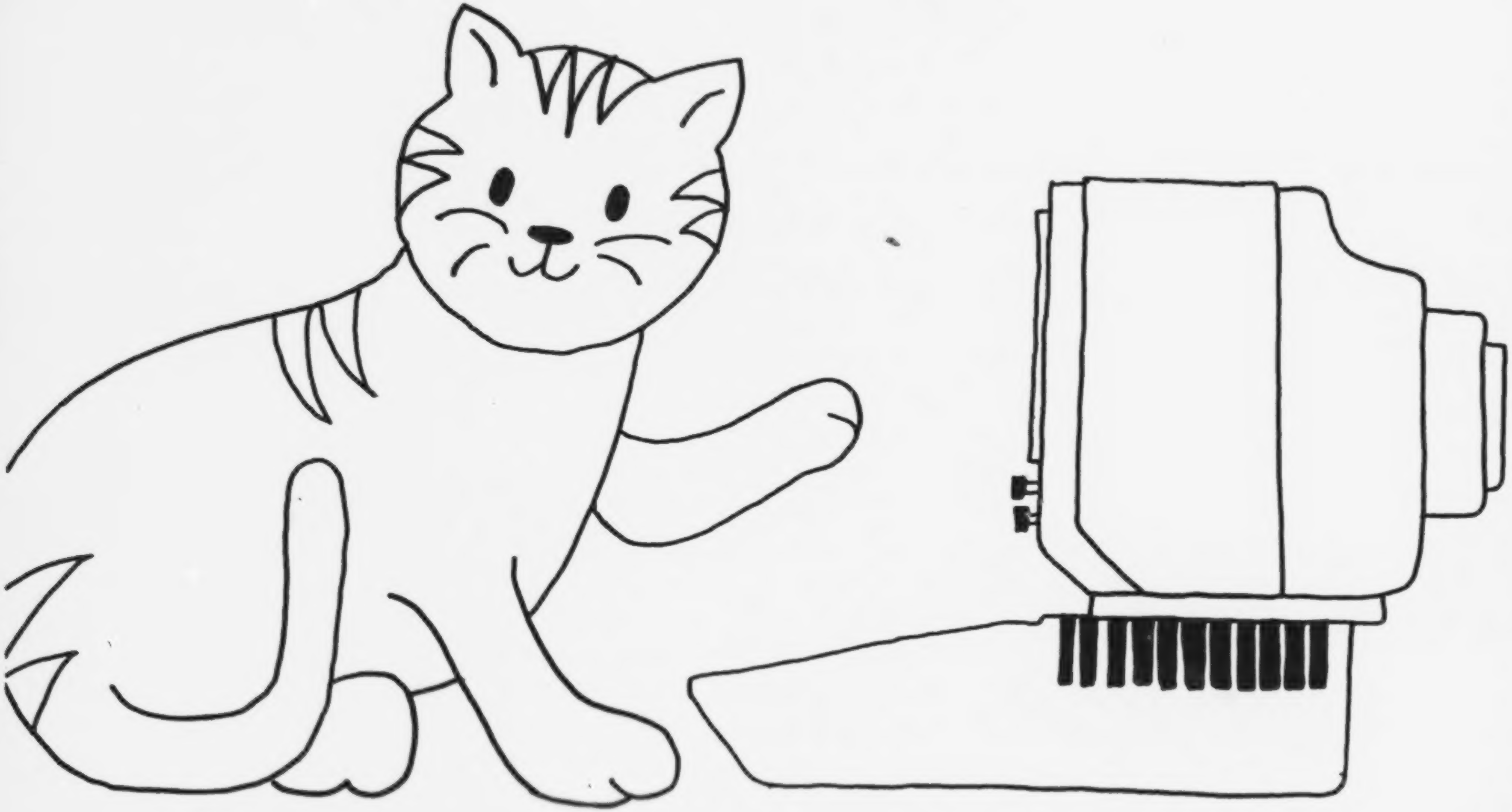
APPLE IIe COMPUTER

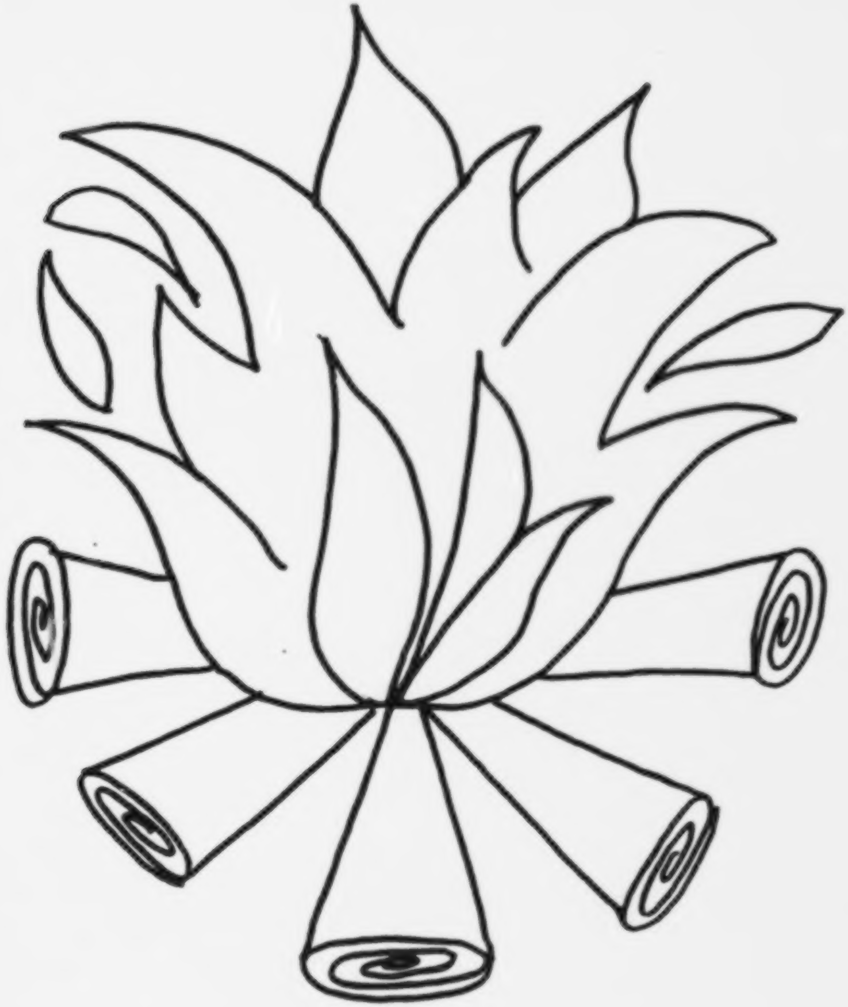

Printer Card
Disk Drive Card
I/O Ports
Central Processing Unit (CPU)
Power Supply
ROM
80 column card
RAM
Keyboard

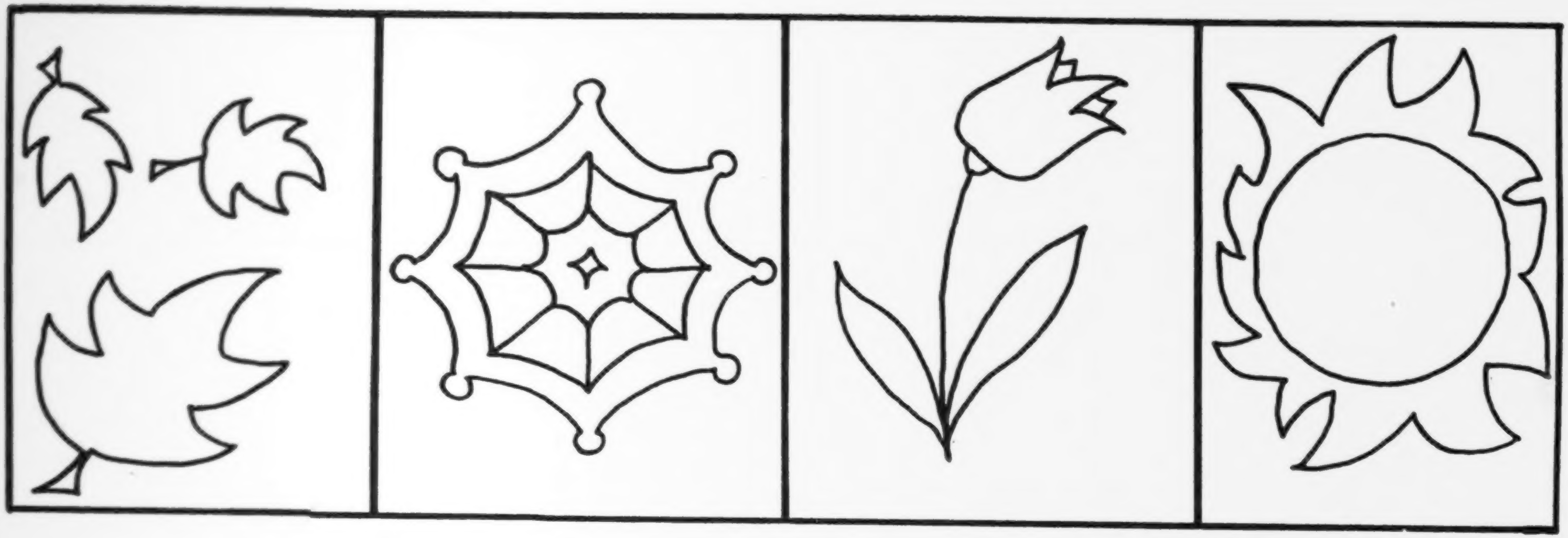



WA-TEXT:
Topic/News
WA-TEXT:
Group 2
WA-TEXT:
Rusty

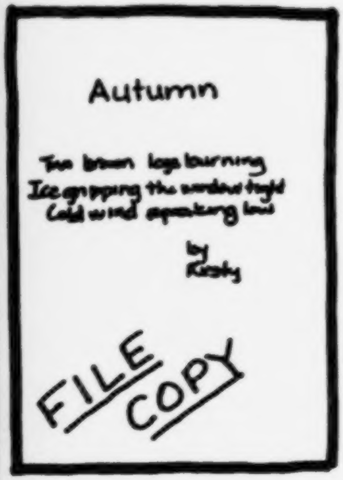
U.S. MAIL







Nature Words	Weather Words	Games of the Season
leaves	tornado	football
snow	rain	soccer
sun	snow	basketball
soil	fog	lacrosse
tree	cloud	
flower	hail	
animal	wind	
breeze	sleet	
bird	storm	
field		

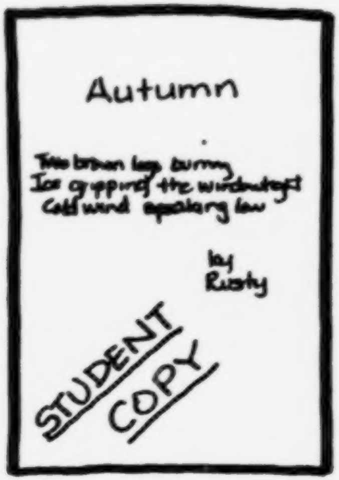


Autumn

Two brown logs burning
Ice gripping the window tight
Cold wind speaking low

by
Rusty

FILE COPY

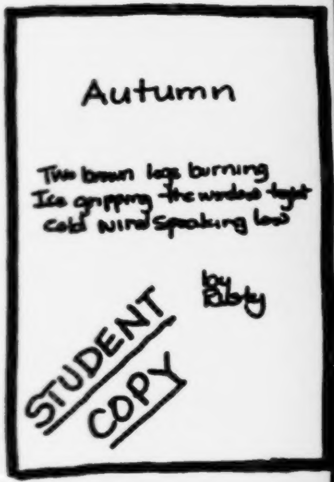


Autumn

Two brown logs burning
Ice gripping the window tight
Cold wind speaking low

by
Rusty

STUDENT COPY

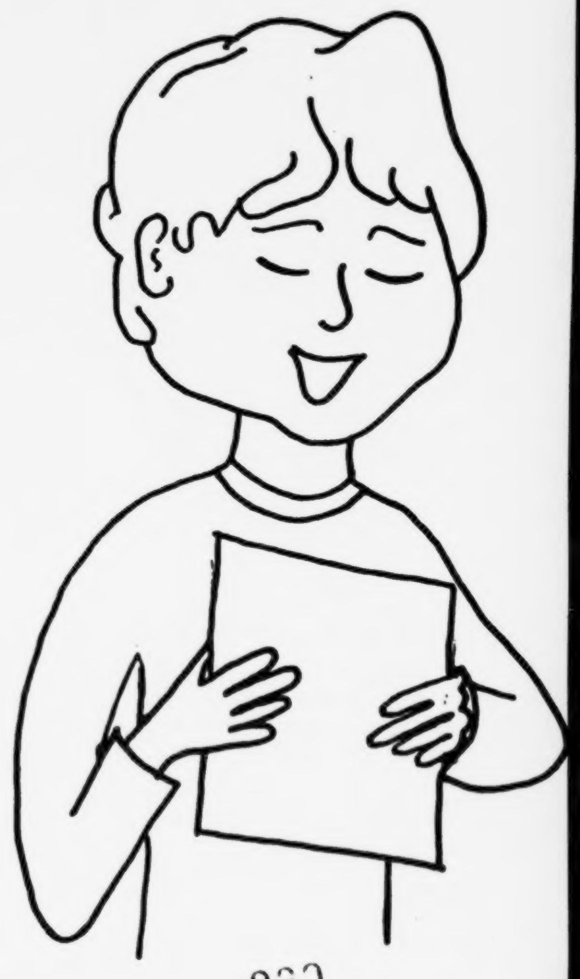


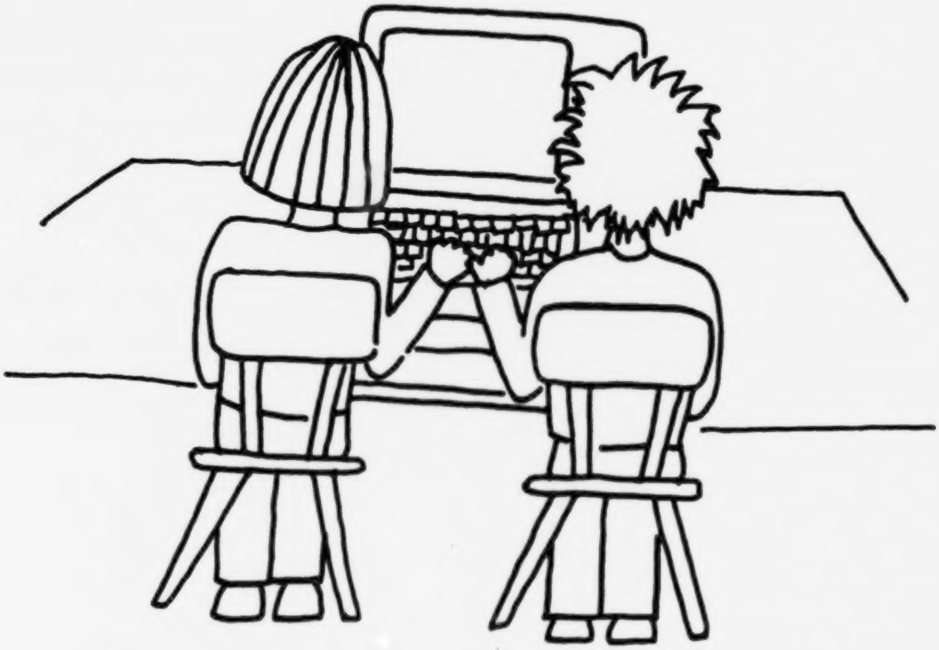
Autumn

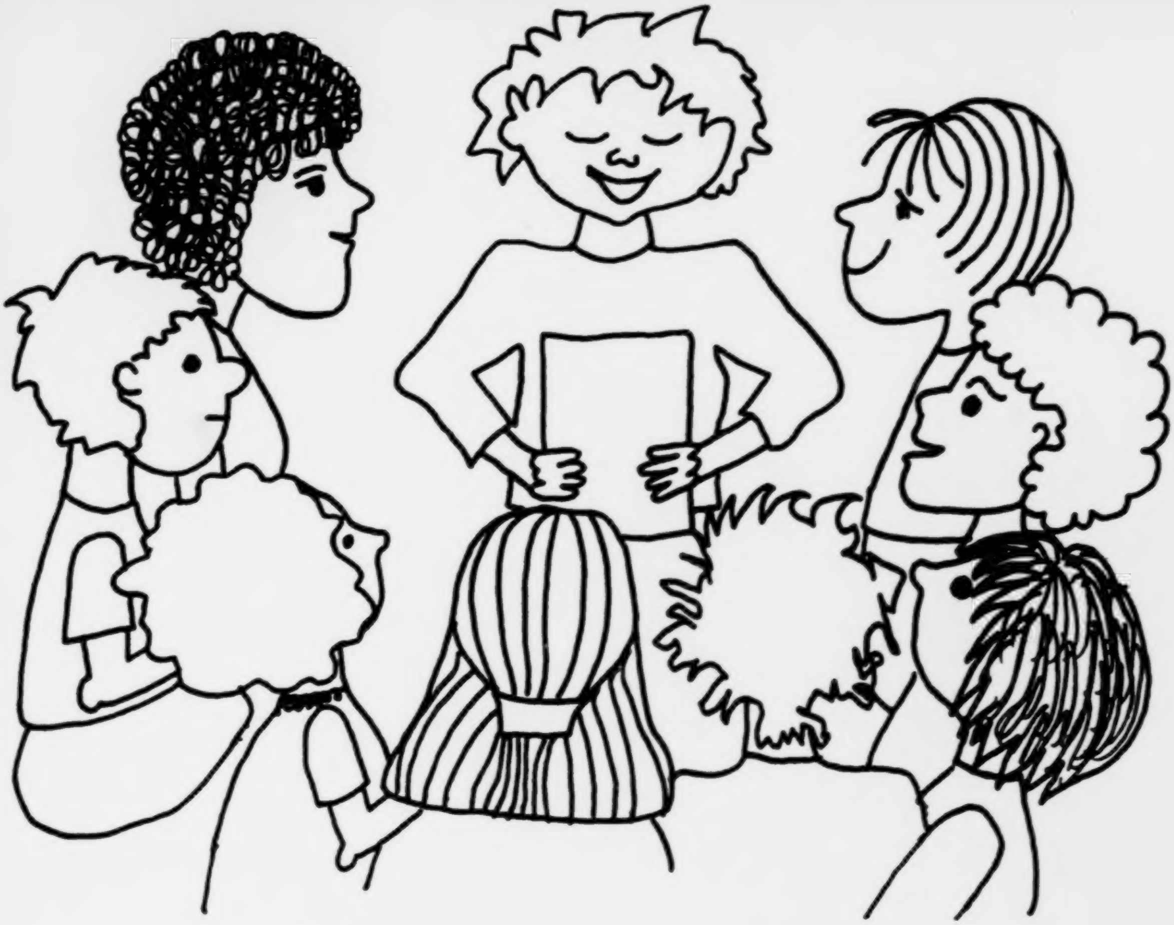
Two brown logs burning
Ice gripping the window tight
Cold wind speaking low

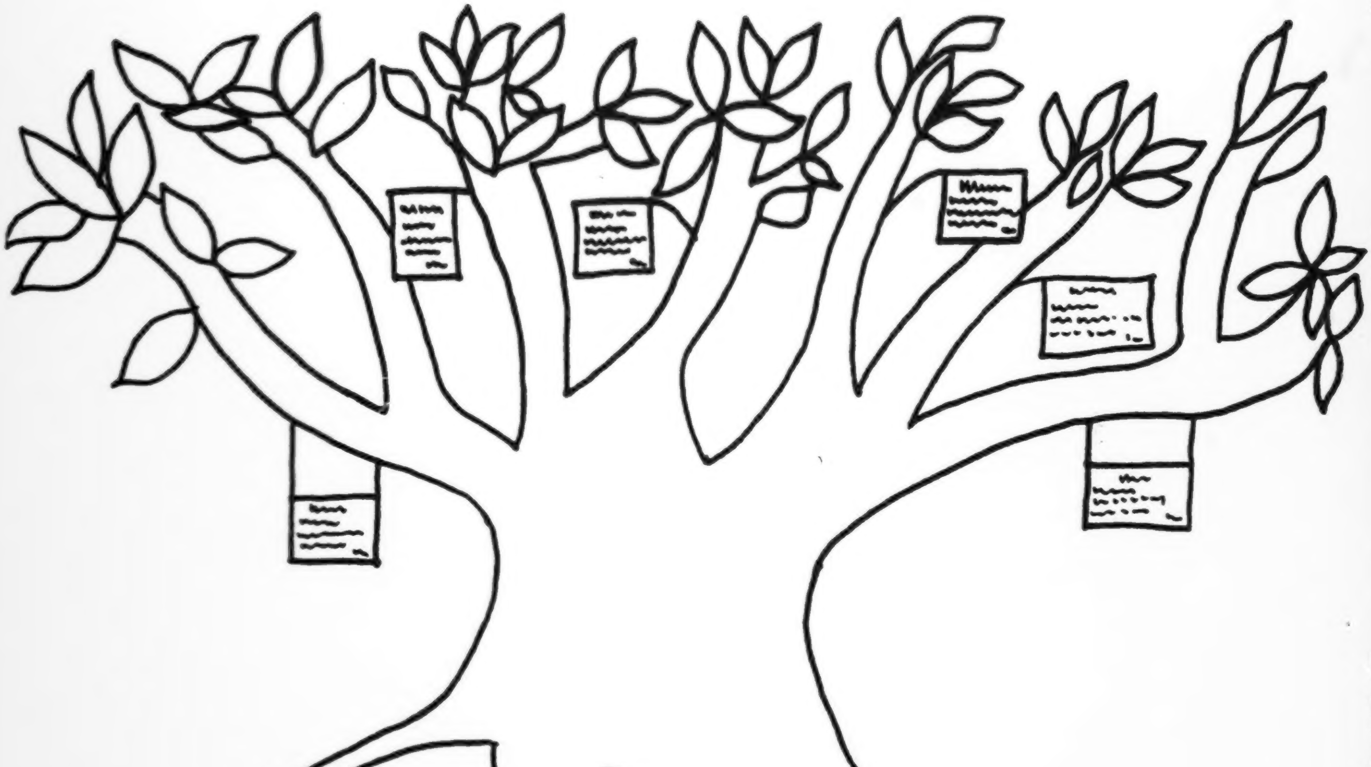
by
Rusty

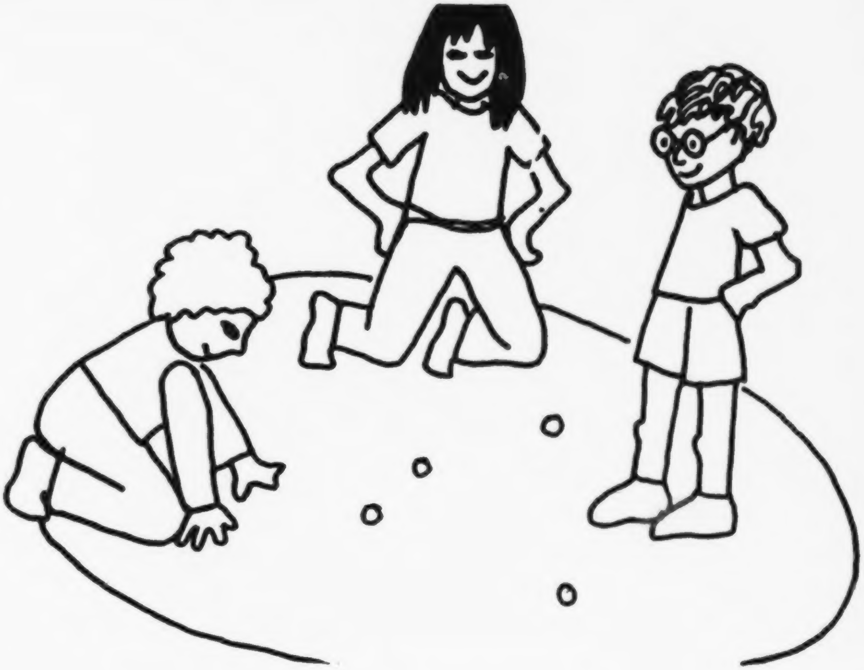
STUDENT COPY

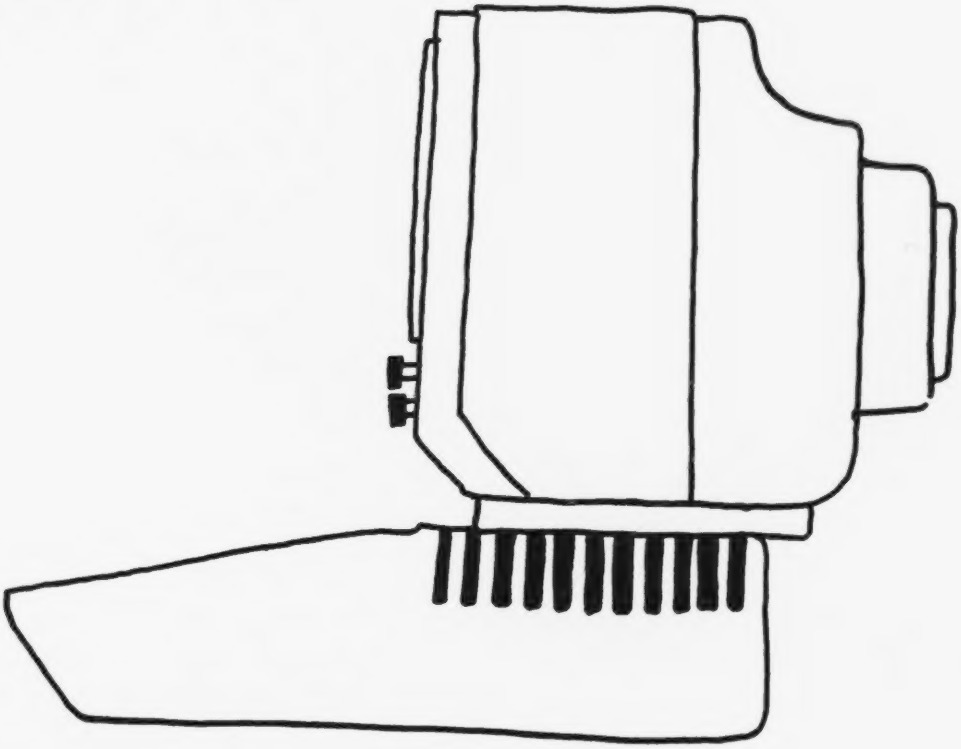












How To

The WRITE HELP Edition, Anywhere, USA

-- THE COMPUTER CHRONICLES --

WINTER 1984 NEWS FROM ACROSS THE NATION FOR AND BY STUDENTS P-1

EDITORIAL BOARD

Carey Braswell
Robert Dow
Chris Hart
Jeff McCauley
Derek Yard

Welcome to Our Last Edition!

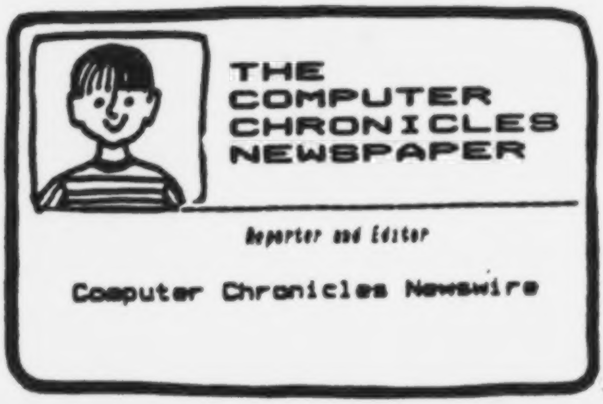
It has been a very exciting and satisfying year here in room B-2 at Olive School in Vista. We have used our classroom computer in many ways including the production of three Computer Chronicles newspapers.

Our thanks to all contributors for our final issue. We welcome back our nearby friends from Garrison School in Oceanside as well as our Alaskan friends in Wainswright. We are happy to accept articles for this issue from a new school in Juneau, Alsaka as well.

My personal thanks goes out to yet another fine, hard working editorial board who has the ultimate responsibility for accepting, editing, and organizing all articles that you see here. We hope you will enjoy reading our paper...see you next year!

Sincerely,

Barbara Miller-Souviney


THE COMPUTER CHRONICLES NEWSPAPER
Reporter and Editor
Computer Chronicles Newswire

(Harbor View, Juneau, AK, 4-24-84)

War is a World Problem

Russia has some satellites in space with lasers. They may be able to blow a country away like that. It is possible that they could do that to us. But I am not sure if the U.S. could do that too, but that is inhumane in my opinion.

There is also a war going on somewhere also about religion. They may be able to cooperate by compromise. They could just let each other have each side do their own thing or they could mix both up together and have one big religion.

By, Senny, Grade 6

(Garrison, Oceanside, Ca. 12-5-83)

Star at Garrison

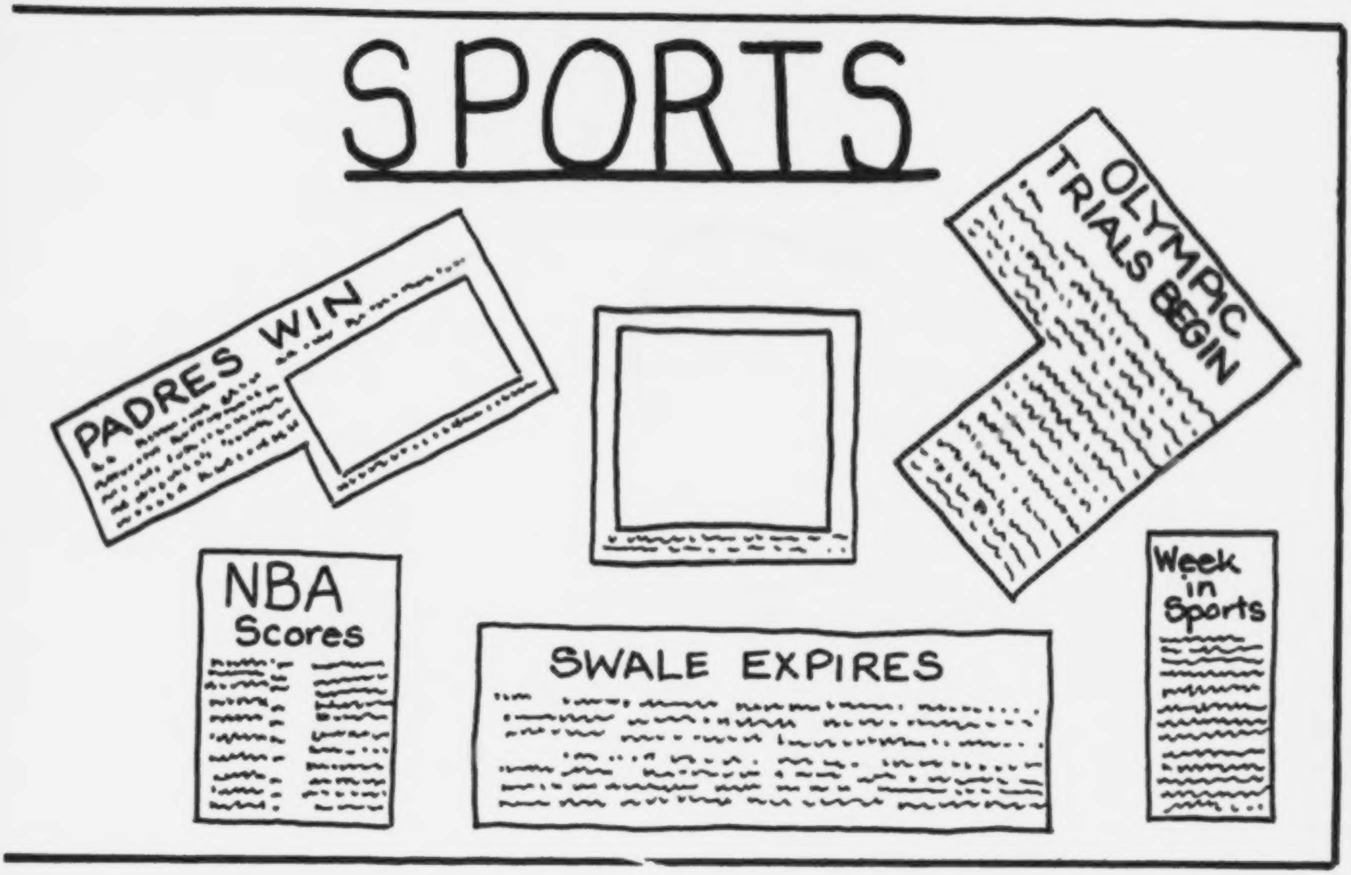
On December 15 and 16 Ms. Whooleys class had Willie Buchanon as a substitute. The class really enjoyed having him for a substitute and did a lot of special things. On the end of the 15th he was signing autographs for anyone that wanted them.

By, Heather and Colina, age 11

The Soviets Are Not Coming to the Olympics

The Soviets aren't coming to the Olympics in July in L.A. because they want more security for their athletes that are going to compete. The U.S. didn't go to the Olympics they had in the Soviet Union.

By, Derek Yard
Grade 4
Olive School


SPORTS
PADRES WIN
OLYMPIC TRIALS BEGIN
NBA Scores
SWALE EXPIRES
Week in Sports

THE
COMPUTER
CHRONICLES
NEWSWIRE

Reporter and Editor

ComputerChronicles   Kamehameha Schools

THE EDITOR'S DESK

Name Your Favorite

Read the articles from our newswire. Fill in the poll by finding the name of your favorite article and placing a star in the box beside it.

Name of Article														
Cutting Ice	★	★	★											
Fund Raiser	★	★												
Olympics	★	★	★	★	★	★	★	★						
Concert														
Cable TV	★													
School Store	★	★	★	★	★									
Pet Parade	★	★	★	★										
Talent Show														
Fishing	★	★	★	★										
Baskets	★	★	★											
Interview														
Gymnastics	★	★	★	★	★	★	★	★	★					
Substitute	★	★	★											
Jog A Thon	★	★	★	★	★	★								
Video Game	★	★	★	★										
Review	★	★												